The Army's Global Frontiers

SEPTEMBER 1961 . 60

JI3 N FIRST ST ANN ARBOR MICH



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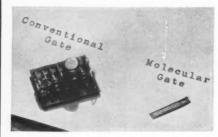
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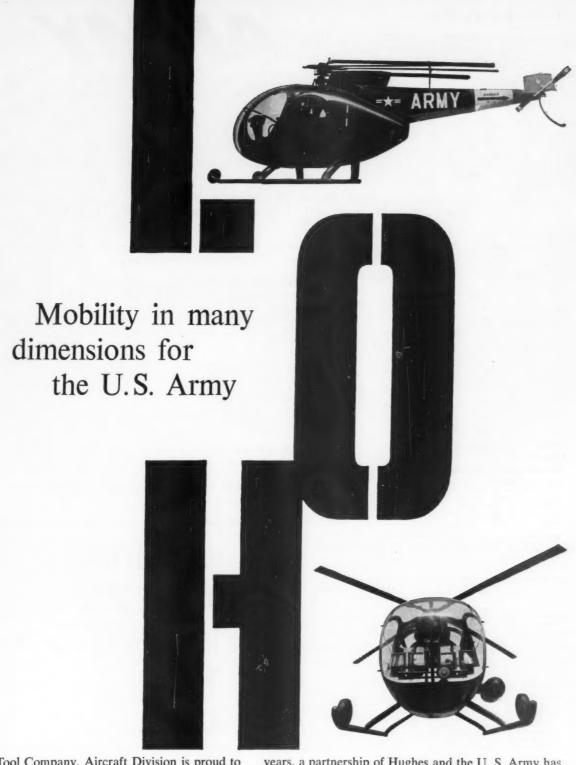
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Hughes Tool Company, Aircraft Division is proud to have been selected to participate in the development of the Army's new Light Observation Helicopter.

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A PROFESSIONAL PUBLICATION DEVOTED TO THE ADVANCEMENT OF THE MILITARY ARTS AND SCIENCES AND REPRESENTING THE INTERESTS OF THE ENTIRE U. S. ARMY

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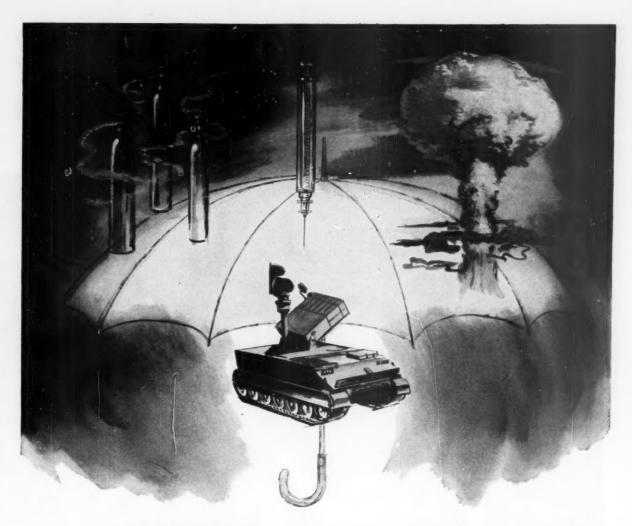
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### COVER

By Tom Hickson





# PROTECTION AGAINST C-B-R ATTACK

Protecting troops under fire obviously becomes an infinitely more complex problem when that attack might possibly involve Chemical, Bacteriological or Radiological warfare; calling for special detection apparatus, filtering equipment, and decontamination systems. A team of FMC design engineers is now working on this problem, applying our company's considerable experience in chemicals and in machinery. If you have an upcoming project in this field, call in FMC at the planning stage.

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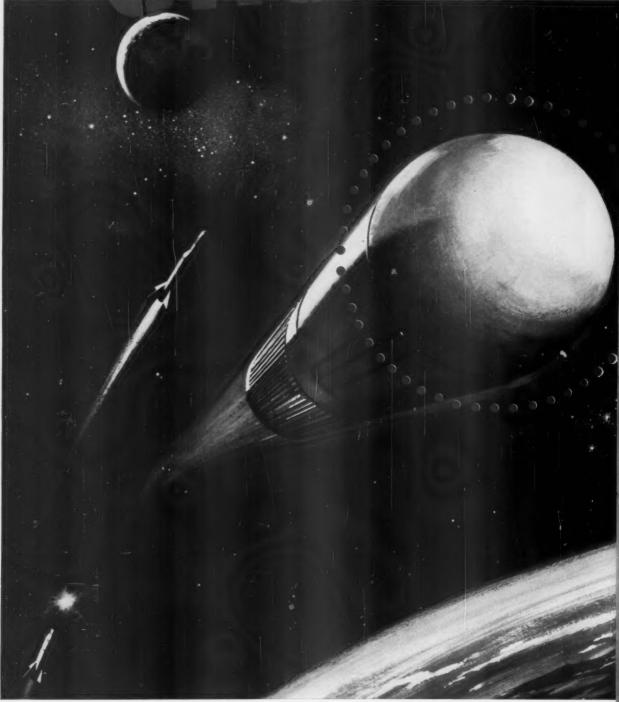
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### ON PENTAGONESE

● Congratulations on Fred D. Mc-Hugh's "Pentagonese" in the May issue. During the 10 years that I worked in Ordnance with him in the Pentagon we often shared our gripes about official jargon and just plain illiteracy. I'm glad you gave space to the subject, even though I have little confidence that it will do any good.

HARRY C. THOMSON

Evanston, Ill.

### TEN MINUTES NOT ENOUGH

● Congratulations to Colonel DeHoff on "Why 50 and 10?" in the July issue. He has beat me to the draw: only the night before I got my copy I had set out to draft a Cerebration of slightly different nature but on the same subject.

This question of "Why 50 and 10?" is not only for the reservists; the active Army can benefit as well, both in troop units and at schools and training centers.

A break is not needed after every class, but when one is needed, 10 minutes are not quite enough, particularly if there is movement between class sites. There is no need to add a 10-minute break onto the last hour of the morning or afternoon; why quit work at 1150 instead of at 1200? Almost any subject which can be taught in 50 minutes can be taught in 50 minutes can be taught in 40; if it cannot, maybe it was squeezed too tightly into 50 minutes, and really should cover a full 60.

Put all this together and you can come up with schedules that go like this (figures are minutes, breaks are of 15 minutes): 40, 40, break; 40, 40, lunch; 40, 40, break, 40, 40, break, 40, 40, break, 40, 40. Or: 60, 20, break, 40, and so on.

When the operations sergeants start figuring such schedules in clock times they are not at all well taken with them, but after the first time it goes easy. The recruits don't seem to mind at all; they go when and where they are told. The one who is made happy is the training officer, who has too much to teach and not enough periods in which to do it. With such a schedule he can work in 12 40-minute periods in a nine-hour training day. Whether 40 minutes is an "hour"

of training (like 50 minutes is an hour!) is not material. Twelve times 40 is 480 minutes, which is 30 full minutes more of training than you get out of the straight 50-and-10. This might even be enough time to schedule the haircuts under "Care and Cleaning," so that the barbers don't go nuts between Retreat and Call to Quarters.

This worked well for me, and the CONARC inspectors never got alarmed. The barbers were overjoyed.

COL. DOUGLAS LINDSEY

Army Chem Center, Md.

### REPRINTS ON SPECIAL FORCES

• Your excellent article on Special Forces in the June issue is just what we need to help boost the Special Forces program.

I am writing to inquire how I can secure about 5,000 reproductions for use as handouts. I know there are channels to go through, but by the time I find out how and where to begin it may be too late. All the help and information you can give me will certainly be greatly appreciated.

CAPT. SAMUEL L. BENNETT Fort Jackson, S. C.

 Captain Bennett was directed—as are all other readers—to the Special Warfare Center at Fort Bragg, N. C.
 —THE EDITORS.

# ON SHOWING RATINGS

● "Research has proved that when the rater intends to show the efficiency report to the rated officer, he tends to inflate it." Period. So reports Lt. Col. Robert C. Storey in his informative piece, "The New Efficiency Report," in the August issue. Thus, showing reports to rated officers is prohibited, and if they want to know where they stand "they can examine their records in the Pentagon."

It is tortured reasoning such as this that makes me almost happy that at 52 I am superannuated and unlikely ever to be rated again, or to rate again.

What difference if the rated officer is shown his report, or if he waits 60 days for it to clear channels and has a friend in Washington look up the

report in the Pentagon? The rated officer will still know whether the rater is a man or a mouse.

Why straight-jacket the leader, who is willing to show the report to the rated officer and indicate why he is rated as he is, to protect the gutless form-filler who apparently trembles at the displeasure of the officer who must be rated low?

Why throttle the ambitious junior who wants to know where he stands so he can improve? The answer is obvious: because some gutless leaders are afraid to tell their juniors where they are weak. This is leadership?

There is another answer, not quite so obvious. We must protect the rater who tells his junior, "You're doing a good job, Bill," and hacks at him behind his back, figuring that one or the other will be long gone by the time the junior sees the efficiency report.

Since 1955 I have examined 1,400-odd 201 files at the request of their subjects. I have had a major weep at my desk for what he did to three captains under his command—captains who were RIF'd because of the major's ratings. The tragedy here was that the major believed what he read on the ER form, and didn't realize that Excellent meant Unsatisfactory. His captains were excellent, and he rated them so.

Many times I have written officers that their ERs included 2s and 3s, to receive in return a shocked reply saying the rater had told them they were doing fine, were getting "fine" reports, and had pointed out no deficiencies. All these juniors can't be liars.

Showing the report to the rated officer is no panacea, but it can go a long way toward preventing the gutless from murdering the helpless. If it results in inflation of ratings, so be it. Better to have inflation that can be corrected in the scaling than knifework in the dark that shatters the individual and loses promising juniors to the service, in order to protect gutless seniors. A senior is supposed to train his juniors, not eliminate them behind the mask of classified paper.

COL. S. LEGREE

# LET THE ARMY LEAD

• In "Our New Metric Army" (June) Colonel Whitsett implies that we should revert to U. S. measurements in the armed forces rather than follow the current, somewhat confusing trend toward the metric system. The basis for his reasoning seems to be that those we use in civilian pursuits are here to stay: inches, feet, miles, ounces, pounds, pints, quarts, and so on. I do not think they are. As surely as practically the rest of the world

has left the ancient systems of measuring, I believe the British and we eventually will find it too costly to retain them. Even now, whenever we must be exact, we use the metric system. Of course, we do not think of miles by the inch, nor do we measure a room in fractions of a mile, as the Colonel points out. And in pointing this out he presents an excellent argument for changing our way of thinking away from the current anomaly.

What's wrong with letting the Army lead the way? Where our scientists, engineers, and teachers have failed to convince the public or Congress, maybe the Army could. The men we turn back each year to civilian life, and our reserve people, if only made aware of the advantages of the metric system, could eventually influence those that just never thought of what we are losing now in efficiency.

MAJ. F. N. GRIMETON

Washington, D. C.

• I was somewhat surprised to read in Colonel Whitsett's Cerebration how tough it is to learn to think in metric terms.

Somehow, I just can't believe that experience with metric measurement is so difficult to acquire that we ought to go our merry, conventional way alone, or try to convert everyone else to our strange system. I have observed that almost any soldier here in Europe, after only a week or two of experience, can readily estimate a girl's measurements in centimeters, or tell you how many more shots there are in a liter than in a fifth.

Judgment, I admit, develops a bit more slowly.

LT. COL. DAVID L. JONES APO 403, New York, N. Y.

# DAYS OF THE EMPIRE

· As one of the first members of the U. S. Infantry Association, now Association of the U.S. Army, I was very much interested in "The Rescue of Lieutenant Gillmore" in the June

I was unfortunate enough to have been captured by Filipino insurgents on 29 May 1900, not very far from where Gillmore was taken. I was then captain in the 35th U.S. Volunteer Infantry, stationed at San Miguel de Mayumo, in Bulacan Province, Luzon. My patrol of six mounted men lost three killed and two wounded before being overpowered.

On being taken to the rear to where the senior Filipino officers had assembled about 150 men, a comandante

(major) named Bartolomé, known as El Maestro, told me with much pride that he had captured Lieutenant Gillmore and his boat crew near Baler. He showed me a Navy revolver which he said he took from Gillmore, and which he was wearing.

I was taken to the camp of Colonel Pablo Tecson y Ocampo, and held there for some six weeks. During this time I talked daily with Colonel Tecson who spoke good Spanish and who was well aware that eventually he would be forced to surrender. Tecson said El Maestro's claim was true, and that he had captured Gillmore in this

Gillmore had arranged to talk with the insurgent leader regarding the Spanish garrison then besieged at Baler, and was going up the river in a pulling boat. El Maestro placed his men on the high banks of the narrow stream and when Gillmore was directly under them, commanded, "Alto! Alto! Alto!" Of course, the boat could not be stopped instantly, and the insurgents opened fire.

Tecson assured me this was true, and he thought it a piece of treachery, "contra las leyes de guerra" [against the rules of warfare]. He asked my opinion, and of course I agreed with Tecson. But Tecson said that Bartolomé, then a captain, was made comandante for the deed by Aguinaldo himself.

Of course, this account differs in many particulars from Gillmore's, but it is a curious story and worth preserving. Tecson did afterwards surrender to the U.S. forces and was made Governor of his Province of Bulacan by Governor General Taft.

BRIG. GEN. CHARLES D. ROBERTS Chevy Chase, Md.

Oclonel Howze's account certainly brought back memories. I was with Troop C, 3rd Cavalry, starting on the northern advance with Generals Lawton and Young in San Ysidro. Someone founded scratched on a convent wall, "Gillmore and party pulling north." "To Horse" was sounded and we started north.

All our captains were old Indian fighters; some had been in their troops for 20 years. The majors were Civil War veterans. I suppose all had visions of promotion if they got Gillmore and his men.

The first river we crossed at Cabandian we had carabao carts for transport. The carts upset, and our pots and pans and what rations and

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Sometime in 1963, this spacecraft will land on the moon. In it will be over 200 pounds of scientific instruments designed to gather, analyze and transmit information about the moon's surface, subsurface and atmosphere

The Hughes-designed Surveyor will be built to "soft land." As it approaches the moon, after a 66-hour flight from the earth, retro-rockets will be fired to cushion the impact of landing.

Then, standing on three legs, the 750-pound moon explorer will set to work—as scientists here on earth watch via television. High-quality television pictures of the lunar landscape will be taken and transmitted. Drills will pierce the moon's surface and samples will be brought up into the spacecraft for chemical analyses. Other instruments will measure the geophysical characteristics of the lunar surface, as well as the moon's magnetic and radiation fields.

Hughes will build seven Surveyor vehicles which are scheduled to be launched at Cape Canaveral during the period 1963-66. The work is being performed for the National Aeronautics and Space Administration. Technical direction is by the California Institute of Technology Jet Propulsion Laboratory.

The information which Surveyor gives us will be an important step toward the day when man himself will stand on the moon and look out into the universe.

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medical supplies we had were lost in the river. The trail of Gillmore was getting hotter and hotter, and many a night we slept hungry, wet and tired. Skirmishers were all over. We were plagued with malaria and dobie itch (now they call it athlete's foot).

The trail got hotter and hotter and our horses poorer every day. There was no grain except for green rice from the paddies. "Outside and cut rice!" was the favorite order of the troop's noncommissioned officers.

Finally in Vegon Ilveas North a young lieutenant colonel of the 34th Infantry came in with Gillmore and survivors, a sick-looking lot who looked like they had endured the hardships of hell. I soldiered with Frenchy Joe Valancour, 34th Infantry, who was the first man to get Gillmore in contact with Colonel Howze. Colonel Howze gave Frenchy a wonderful letter of recommendation.

We called it "the days of the Empire," and there are not many left. I am 84, and still champing at the bit.

SGT. C. P. REYNOLDS Leavenworth, Kans.

# APPLYING VARIABLE FIREPOWER

"Alfa 38," by Major Shaddy (June) is full of interesting notions. However, if you will check with your colleague at the National Guardsman, he can show you the same idea in his letters column, signed by yours truly.

Major Shaddy presented not only the idea but some examples of how to apply such a weapon. From experience with the quad .50, his conclusions are very logical indeed. The quad had impressed people in both hemispheres, but most of them are either on our side or dead if on the other. Someone on an intercepting detail in Korea caught a reference over the Chinese radio net to the hail of stuff the 145th AAA Battalion was sending over. "Turn off that running water." That unit used the "Running Water" part as a motto.

More recently, during the Bay of Pigs incident, the Cuban People's Democratic Forces—or whatever they call themselves—applied some of the ZPU4 guns against the much outnumbered invaders with a great deal of results, especially since the ZPU fires the powerful 14.5mm round once used as a Soviet AT-rifle caliber.

The end of the quad .50 leaves us with a gap in armament. We have fast-firing small arms and powerful single-loading stuff, such as the 106, MAW, and various artillery sizes. But the shower of lead we used to get out

of the .50 has not been replaced by any other weapon.

Compared to the quad .50, the Gatling is simple to set up in a turret mount. The barrels in a cluster could be shrouded with armor or left bare, and the crew could be easily protected. The quad, with its ammo cans and widely spaced barrels, have little crew protection. But where they drew first, they didn't need it.

CWO JOHN P. CONLON Newark, Ohio

• I enjoyed reading Major Shaddy's article about utilizing the Vulcan 20mm gun, and feel you might find the enclosed clipping fitting.

A Vulcan is on display at Wright-Patterson AFB museum in Dayton. Its World War II predecessor, the 20mm Oerlikon, was used extensively by the Navy but never came into favor with the Army because its mechanism was quite sensitive to dust and dirt and required lubricated ammunition for reliable functioning.

MAJ. PAUL J. KOPSCH

Lorain, Ohio

 Major Kopsch enclosed this item by John L. Powers in Family Weekly for 4 June 1961:

Government missile experts were giving a metal-producing company headaches. They demanded a new metal which would resist penetration by stray meteorites in space, and as a test they submitted each new product to a point-blank blast from 20mm shells.

Each time, the company would receive a report from the missile center that shells had ripped through the metal, and research metallurgists would go to work on still another version. Finally, they came up with an alloy with unmatched strength and forwarded it to the testing center. Later, the company president flew to the center to check on results. As he waited for a report, he noticed a cheerful gentleman holding a large packing case.

"You seem happy," he said. "Good news?"

"I'll say," said the stranger. "I own a munitions firm, and no matter how powerful we make our 20mm shells, the Government says it has a metal that resists them. But we've licked it again!"

● Hats off to Major Shaddy for the Alfa 38 M61 gun and tracked armored recon vehicle! It will be a big thing in reconnaissance outfits.

SFC DONALD DOTLICH

Fort Benning, Ga.

The stockholders of Chance Vought Corporation and Ling-Temco Electronics, Inc., on June 30, 1961, approved plans for combining these two companies into a vast new company — Ling-Temco-Vought, Inc., effective August 31, 1961.

Combination of these dynamic, experienced organizations links depth of capabilities with depth of management to meet the advanced challenges of electronics, space, communications, aircraft, and missiles.

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# LETTERS

### THE NATIONAL GUARD IN CARS

• I feel the urge to make a few comments on Monte Bourjaily's piece on CARS in the July issue.

The CARS concept is good, and I believe Mr. Bourjaily has made some points which are in the right direction. However, I think the basic failing of CARS was perpetrated by those who determined the criteria for selecting basic regiments.

The oldest regiments in U. S. history are not Regular Army units. Those with the longest lineage are National Guard (militia) units, many of which can trace their histories to before the Revolutionary War. An example is that of the 111th Infantry Regiment of Philadelphia, which was founded by Benjamin Franklin. There are many others.

Perhaps during the current plans to do away with battle groups and go back to battalions is a good time for another look at CARS. What better way is there to build a strong One Army program, and to accomplish the public relations aspects, besides providing already existing headquarters for the regiments by selecting these old militia units as basic ones for CARS.

This wouldn't solve the whole CARS problem, but it would be a step in the right direction toward correcting much of the disrupted lineage caused by reorganization; linking the past with the present; providing a home and personnel for the regimental headquarters; building a strong One Army program by having Reserve, National Guard and Regular battalions all a part of one regiment.

But even with all this, CARS will never enjoy the light of day until officers and men are assigned to a regiment, which will serve as their home for as long as they are in the service.

LT. COL. A. M. KAMP, JR.

Norfolk, Va.



# Now is the time for all good men...

to listen to the voice of patriotism!

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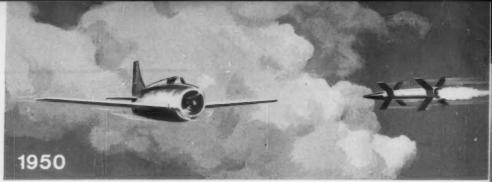
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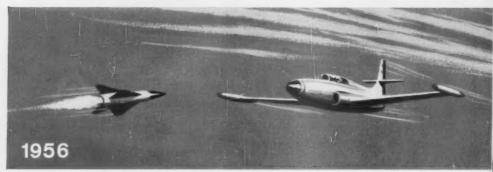
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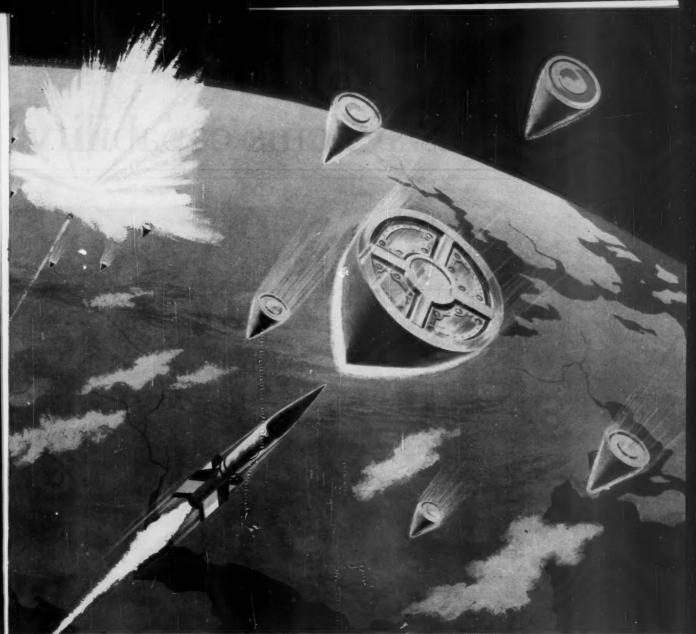
FIRST successful missile-to-missile intercept . . . Raytheon's Hawk.

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The development and production by Raytheon, as prime contractor, of the U.S. Army and Marine Corps Hawk, and the U.S. Navy's Sparrow III missile systems, are part of this broad spectrum of defense system capability. Allied programs include study of



Artist's conception of the ballistic missile challenge.

# challenge of ballistic missile defense

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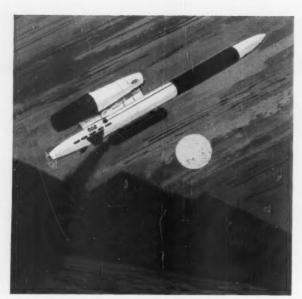
# This is systems capability

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V/STOL FACILITIES. NAA-Columbus has one of the largest wind tunnel V/STOL design testing sections in the world (14 feet wide by 16 feet high). This is part of the extensive V/STOL facilities Columbus has used in the development of both lift-fan and tilt-wing aircraft which need no runway for take-off or landing.



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Of all the soldiers engaged in carrying out the Army's global missions none have a more important task than those junior officers and senior noncommissioned officers who live and work with the combat outfits of the underdeveloped nations we are aiding through military assistance programs. Theirs is the job of building a bridge of understanding between themselves-the finest product of the industrial revolution-and men whose roots are imbedded in ancient civilizations but who have hardly heard of the industrial revolution, let alone are part of it. Those American soldiers who serve with MAAG units at the lower levels of command should excite our envy and admiration, for theirs is hard but productive work. And what they learn from those they teach is important to all of us; our relations with the people of these emergent nations may well determine the course of our own future.

Our lead article this month (page 27) is by one of these younger soldiers. Major Boyd T. Bashore, recently promoted from captain, writes not only from his knowledge of the Vietnamese with whom he recently did duty-including six months in the jungle country as advisor to an infantry regimentbut of their enemy, the soldier of the Viet Cong. Which, he asks with great pertinency, is the soldier of the future: our six-foot, crew-cut product of good diet, passable schools and automobile-oriented society, or the ill-nourished, unschooled, jungle-reared product of people taken in and made fanatical by communist lies? After reading Major Bashore's short piece vou'll think hard about this. Now on duty at West Point, from which he graduated in 1950, Major Bashore served as an enlisted man during the Second World War.

CAPT. ROBERT B. ASPREY, USMC inactive (page 30), writes from another part of the world—West Germany, where he observed and

studied the new German Army. He also wrote the report on Seventh Army's Wintershield II (May) and "Berlin Command: Tactical" (August). After service in World War II and during Korea, Captain Asprey became a professional journalist and specializes in military affairs.

LLOYD NORMAN (page 37 and page 44) is an old friend of ARMY readers, and knows the Pentagon news beat from long service inside it. As military correspondent of Newsweek magazine, he has covered the Pentagon and other military news beats since he left the Navy in 1946. He was with the Chicago Tribune from 1948 to 1958 as financial reporter, general news reporter, and Washington correspondent, and before that with its city news bureau in Chicago. In 1955 he won a Chicago Tribune national reporting award for his report of the desert march of Task Force Razor and its exposure to a live A-bomb test.

Col. WILLARD PEARSON, Infantry (page 47), is now G3, U.S. Army, Alaska, having also commanded the 1st Battle Group, 9th Infantry, at Fort Wainwright. He enlisted in the Army Reserve in 1935 and came on active duty as a first lieutenant in 1940.

DR. WALT W. ROSTOW (page 53) is a Special Assistant to the President of the United States. He has a deep interest in the problems of communist revolution, subversion, infiltration and propaganda, and has played a part in the build-up of the Army's Special Forces. During the Second World War he served in the OSS, emerging as a major. Before coming to Wasnington, he was a professor of economic history at the Massachusetts Institute of Technology. As is stated at the beginning of his article, it was drawn from an address Dr. Rostow delivered at the Army's Special Warfare Center, Fort Bragg.

Maj. Harlan G. Koch, Armor (page 59), has specialized in mili-

tary terrain studies. A 1946 graduate of West Point, he has commanded rifle, reconnaissance and tank companies, and was training inspector of an armor division. He was an assistant Army attaché in Bangkok. He is a graduate of the Army Language School and the Command & General Staff College, and was assigned recently to the office of the Army attaché on Taiwan in the Foreign Area Specialist Training Program (China).

J. S. Butz, Jr. (page 90), is a free-lance technical writer on aviation and space subjects who works out of Washington. A former paratrooper, he served as an instructor at the Fort Benning jump school in early post-World War II years. He is a former member of the staff of Aviation Week and wrote "Airborne on Wing of Cloth," in our June 1961 issue.

WILLIAM A. MacDonald (page 94), was Chairman of the Board of Hazeltine Corporation—one of the nation's leading developers of electronic equipment—before his death on 11 August. His article is based on an address he made earlier this year at the U.S. Army Logistics Management Center at Fort Lee, Virginia. Among the products of his firm are IFF equipment, combat surveillance radars and antisubmarine sonobuoys.

WILLIAM R. TRACEY (page 72), since 1958 has been Educational Consultant for the U.S. Army Security Agency Training Center and School at Fort Devens. He has taught at all levels of education from elementary school through graduate school. During World War II, he served in the Navy in the Pacific and is now Aviation Technical Training Officer for a USNR antisubmarine squadron.

GEN. BRUCE C. CLARKE (page 76), an occasional contributor to ARMY, is Commanding General, U.S. Army, Europe, after a tour as CG of CONARC.

COL. HENRY E. KELLY, U.S. Army, retired (page 80), has written four other articles in ARMY. He is with the Infantry HumRRO unit at Fort Benning, Georgia.



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# Politics and the Military

The United States military, due to one of the wisest actions of our Constitutional founders, have been kept out of politics, and they continue their responsibilities, regardless of the changes of Administration.

I have no idea what the politics are of the members of the Joint Chiefs of Staff. I have appointed two of them since I have been President, and I have no idea what their views of politics are. This is a most important protection for our country, and it is equally important protection for the military. It prevents them from being exploited or discriminated by political people in either party.

So, therefore, the problem always is, is how can the military remain removed from political life, how can civilian control of the military be effectively maintained, and at the same time the military have the right and the necessity to express their educated views on some of the great problems that face us around the world.

So I think this is a continuing matter which the Secretary of Defense is giving attention to. There is no desire to restrain or prevent any military man from speaking; what we are concerned about, however, always is that they not be exploited for any partisan purpose. And I think, basically, it is for their own protection as well as the protection of the country.

So, in answer to your question, some of this arose because of an N. S. C. [National Security Council] decision in 1958 which placed special responsibilities upon them [the military] and I think that it's therefore an obligation upon those who place those responsibilities upon them to clarify it in such a way that the common interest is protected.

President Kennedy Press Conference 10 August 1961

# Peak readiness quickly

15 AUGUST

The news from Berlin and Moscow underlines the modest dimensions of the President's new defense program which the Congress has approved: Soviet infantry and armor ring Berlin. East German police—a paramilitary force—seal East Berlin exits to freedom. In Moscow, on the heels of his announcement of an increase in Soviet military strength, Premier Khrushchev threatens to build a 100 megaton bomb. And in the torrent of words he has uttered in recent weeks it is impossible to find any hint of a willingness to negotiate on terms that are meaningful.

Modest though it is when held up against the dimensions of the threat in Berlin, the new defense program is a start towards regaining the initiative in the selection of military weapons a President can use. And this may well be the greatest gain of all. It is the long view that if the Berlin crisis can be temporarily resolved other crises in other parts of the world can be met with greater assurance of success when the nation's conventional capabilities are made stronger and brought to a high degree of battle readiness.

The new program goes beyond Berlin, Secretary McNamara told the Congress: "Although Berlin is now the focus of attention, these measures are also directed at the larger problem of Communist threats and pressures all around the globe. . . . What we are seeking to achieve quickly is a peak readiness of our military establishment to respond promptly with appropriate forces, and in adequate strength, to any kind of armed Communist aggression anywhere in the world; and to maintain that posture until we can see more clearly what lies ahead."

To achieve this peak readiness quickly much will depend not only on the Army (and the other services), but on the alacrity with which the Department of Defense releases funds and authority for the Army to proceed. No difficulty should be experienced in the ordering of weapons and other hardware since all items in the augmented procurement appropriation are products currently in production. However, production time may become critical; the arsenal of democracy is puissant but sometimes not too punctual. The augmented total for procurement is \$552 millions, bringing the Army's total for the fiscal year to \$2.5 billions—a figure long advocated by authorities as the amount required annually to keep the Army in up-to-the-minute hardware.

The Army's manpower picture is less clear. With authority to increase the active Army strength by 133,000 (to a total of 1,008,000), the Department of Defense is moving more cautiously. The most immediate problem is to bring the Army's existing combat, combat support and logistic support

# Fighting the Viet Cong

Many American Military Assistance Advisory Group officers in the field with the Vietnamese Army are familiar with the Viet Cong's tactics. "Most of us are sure that this problem is only fifteen per cent military and eighty-five per cent social and economic," Lieutenant Colonel Arthur P. Gregory, a MAAG officer assigned to the southern delta, told me. "It's not just a matter of killing Viet Cong but of coupling security with welfare."

The army has abandoned the task of guarding the frontiers against improbable conventional invasion and has turned seriously, and often effectively, to the task of fighting the insurgents. The appointment of a senior general, hitherto occupied with strategic planning, as field commander, and the division of the country into three territorial regions are moves designed both to improve efficiency and to prevent President Diem from continuing to intervene directly in the conduct of military operations. Sixty companies of rangers, trained by MAAG officers in guerrilla tactics, have added flexibility to the army. The badly paid and wretchedly equipped fiftyeight-thousand-man Civil Guard, which bore the brunt of the fighting last year and early this year, is also being expanded, restrained, and re-equipped with assistance from the United States.

Finally, a major effort is being made to improve security communications. Most isolated hamlets and villages have had to rely on runners to send word of a Viet Cong attack to the nearest Civil Guard or army post. In future, village defense units will be able to radio for help.

In principle, therefore, the right military steps have been taken. When the monsoon rains end in October and the new campaigning season begins, the Viet Cong will find itself opposed by a much more impressive-looking deterrent force.

DENIS WARNER in *The Reporter*, 17 August 1961 units up to full strength, to provide the cadres for an increase in training requirements, and to maintain the readiness posture of on-site air defense missile batteries. Present indications are that the Army will build up to an active duty strength of about 950,000 by year's end; this figure could go to 975,000. Priorities are unclear but they should include building up Seventh Army and its supporting forces to full strength; to get STRAC into fighting trim; and to build the three STRAF divisions to full combat strength.

The months ahead will be the busiest the Army has had since the summer of 1950. The best efforts of every officer and man will be needed to bring the Army to the highest state of battle readiness in the shortest possible period of time. What should have been done during the years since the end of the Korean War must now be accomplished on a semicrash basis. This again underscores the fallacy of penuriousness in military spending during what used to be called the piping days of peace. Certainly every dollar ever saved in peacetime has been spent many times over in crash mobilization programs during a time of crisis.

Related to this is the error of maintaining units at less than full peacetime strength and counting them as units ready for active service. Another, and possibly a more grievous error is that of misnaming a unit so that it appears to be what it isn't. Training divisions that are counted as active combat divisions are a flagrant example of this. It has been known to many soldiers for years that our so-called 14-division force wasn't really an 11-division force at best and considering the weaknesses throughout the whole force was probably much less.

As we go to press no Army reserve component outfits have been called to active duty and unless the world crisis worsens none may be. However, plans are afoot to step up the training of at least selected units of the Army National Guard and Army Reserve and in this there are certain plus factors that deserve mention.

The reserve components are today manned and led on the whole by men with more than a smattering of previous service and military knowledge. The six-month training program for enlisted men and the two-years of active service required of ROTC-commissioned officers has created a reservoir of manpower better equipped to be rapidly moulded into hardened, disciplined teams of fighting men than ever before in our history. That the Army can demand and expect to get a high degree of performance fast is a distinct advantage that shouldn't be permitted to be lost on Mr. Khrushchev.

On the minus side is the regret that they won't be armed with the most modern arms possible. Here the years of lost opportunity are responsible. But the weapons they will have are proven and good, if not indeed excellent by previous mobilization-day standards, and regrets about what might have been can be cast aside. However, at the same time an energetic effort to speed up the modernization program should be undertaken. This nation can again be the arsenal of democracy if we turn to it. A weapon on order has never killed an enemy, but weapons pouring out of our factories would be a deterrent Mr. Khrushchev should respect.—J. B. S.



As the U.S. Army carries out its global missions it finds the enemy's propagandists working to destroy it. "American, go home" reads the sign on this Vietnamese palm tree.

# Freedom Fighters for Asia

What the Free World needs as a matter of very high priority, especially in Asia, is a new departure to carry unconventional warfare into the Communists' own backyard. I submit that the free countries of Asia should take it upon themselves to do two things simultaneously:

- Infiltrate Communist territory and conduct widespread harassing covert operations against the political and military apparatus.
- (2) Eradicate Communist guerrilla forces and subversive operations in Free World territory by covert methods.

The aim of these anti-guerrilla and counter-Communist activities would be to divert the enemy and place him on the defensive. This technique would, at long last, restore some of the Free World's lost confidence and give our political leaders a basis to exercise the initiative. By reversing the present ratio of many of us "containing" a few of them, this new approach would cause a heavy drain on the Communists. It would be more than "against Communism." It would be a powerful force for freedom.

For obvious reasons, the job should be done with Asian (or Middle East or African, or Latin American) nationals, as the case may be. Western countries would assist with supplies and advice, but the main effort would have to be by Asians. The "freedom guerrilla" activity should not be tied tightly to the known organizations like SEATO.

The "freedom guerrillas" could give the Communists a very hard time. They might even be the turning point in the struggle. These volunteer forces should expect to operate to a considerable extent on their own. If, at some later time, events should take a turn that made it desirable to have closer coordination with governments or with regular forces, that could be dealt with as necessary.

Such an effort as this may be one of the few choices left to the Free World. Nearly everything else has been tried, and has failed. Freedom is still losing and Communism keeps on gaining. The volunteer "freedom guerrillas" may turn out to be the missing link in the chain of things that the Free World needs to do. If the free peoples of Asia are not willing to make this attempt, the remaining alternatives appear to be either a wholly Communist Asia or an all-out nuclear war. The Western nations can do very little but be silent partners in such a venture.

COL. DONOVAN YEUELL, JR. USA, retired, Manila, 4 May 1961

# Breakdown on the buildup

For those readers who are interested in the principal details of the new buildup, this run down will be of interest.

PROCUREMENT. The additional \$552 million for procurement breaks down as follows:

▲ \$175 million for tactical support vehicles, including a very large number of trucks and trailers. In fact, the revised budget for this purpose is several times the value of the 1961 program.

▲ \$36.7 million for Army aircraft, including Iroquois helicopters, Sioux observation helicopters and Seminole utility aircraft.

▲ \$19.2 million for tactical missiles. This will enable the Army to increase greatly the number of Honest John missiles over those previously requested in the 1962 budget. Also provided for are additional non-nuclear warheads for the Honest John.

▲ \$14.6 million for non-nuclear Nike-Hercules warheads and Hawk missiles for tactical air defense.

▲ \$98.2 million for combat vehicles, mainly for armored personnel carriers and tank recovery vehicles. This significantly increases the numbers of these vehicles previously requested in the budget, as revised in May.

▲ \$87.3 million for ammunition, including armor-piercing antitank rounds and \$1.3 million for certain artillery and small arms items.

▲ About \$97 million for communications equipment such as radios, field telephones, terminals, teletypewriters, etc.

▲ \$23.1 million for construction and other heavy equipment, including various types of construction equipment, portable generators and related logistic and combat-support equipment.

MANPOWER. Additional funds are provided for an increase of about 133,000 men in the active duty strength of the Army, raising the authorized strength for 1 July 1962 to 1,008,000. This will enable the Army to:

▲ Make the three STRAF divisions (1st Infantry, 2nd Infantry, 2nd Armored) ready for immediate deployment by relieving them of their recruit training mission, increasing them to full TOE strength and furnishing additional non-divisional support elements.

A Round out the manning and support of Army forces in Europe by bringing the Seventh Army and other Army units now in Europe to full TOE strength and providing, if necessary, certain additional support units to the Seventh Army.

▲ Expand the capacity of the Army's training base and increase base support at certain Army camps currently used for training of Reserve units. Fort Carson, Colo., becomes an additional training base.

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  - directional gyro compass system by General Precision
  - (10) RB-47 RECONNAISSANCE BOMBER—Doppler system, directional compass system and true-heading
- computer system-including flight simulator-by General Precision 1 B-70 HYPERSONIC STRATEGIC BOMBER—Ultra-high accuracy General Precision Doppler equipment for the bomb-nav system
  - (2) RC-121D EARLY WARNING RADAR AIRCRAFT Doppler sensor, Doppler-inertial combiner/position keeper central gyro reference system and directional compass system by General Precision
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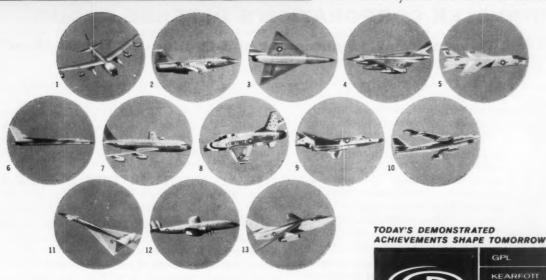
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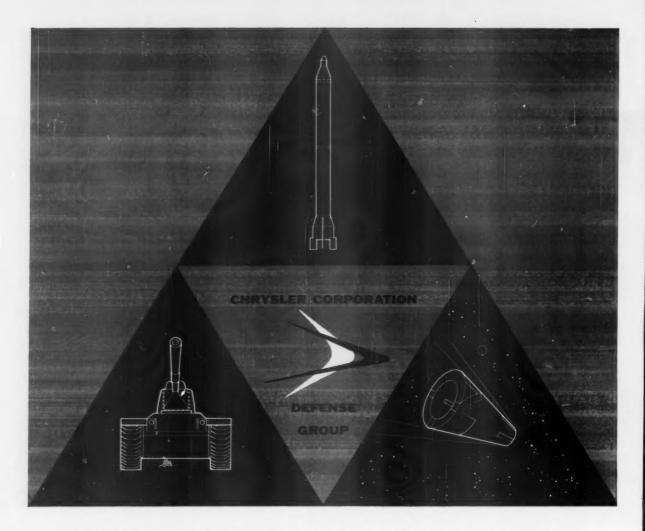
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# Soldier of the Future

Will it be tall, clean-cut, superbly armed Private Jack Armstrong, all-American fighting man, or frail, unkempt, ill-armed Private Le Cao Quang of the Viet Cong?

# By Maj. BOYD T. BASHORE

PRIVATE Jack Armstrong, U.S. Army, considers himself and is considered by many others as the Soldier of the Future. Soon he will be able to remain in constant contact with his squad leader through his helmet radio. He will be armed with an all-purpose hand weapon and wear starched and pressed thermal fatigues protected by a lightweight vest of armor. When not travelling in a ground zero pressure vehicle he will whip about in a helicopter, an armored vehicle, or at least a truck or jeep. When he really gets into a bind he may consider using an energy-trust propellant to hurdle hazardous, fireswept terrain. For digging himself in he will have an explosive foxhole digger. Close air support will be provided by helicopters armed with machine guns, rockets, and guided missiles. Armstrong will be qualified as a ranger, a recondo, and a paratrooper. Backing him up is an impressive arsenal of tactical and strategic nuclear and nuclear-free missiles. He is indeed the very model of a modern combat-arms soldier.

But our Private Armstrong faces keen competition in the person of Private Le Cao Quang, Viet Cong (South Vietnamese communist guerrilla). Quang contrasts with what the U.S. Army in its most visionary press releases calls the Soldier of the Future. He owns neither helmet radio nor armor, and carries no "ray gun." Well-worn canvas, rubbersoled shoes are his zero ground pressure vehicle. He has neither trucks nor jeeps,

and certainly no protection from rocketarmed helicopters.

Quang wouldn't meet the standards of even a mediocre soldier in today's U.S. Army. No six-foot, rock-jawed paratrooper or ranger, this wiry, slight, almost frail-looking soldier has little formal civil or military training and has never undergone a neat week-by-week basic and advanced individual training course. He seldom sees aircraft and never a parachute. Initially, his training consisted of dismantling and assembling his weapon a few times, dry-firing it when possible. After that he simply padded along quietly and patiently behind his better-trained guerrilla comrades moving out to actual operations. Usually, untrained guerrillas like Quang get their first combat experience on "resupply" ambushes, observing the veterans but not really participating in a key role. Quang is allowed to "waste" precious bullets only during his first real fight. Once blooded, the trainee is on his way through the course, graduating by being allowed to participate in full-scale raids against South Vietnamese positions. You pass out of this basic course by being killed or wounded.

In one of our platoons Quang certainly would lose his first crack at a weekend pass, for he would never pass an inspection of personal appearance or field equipment. Quang doesn't sport the



American version of the Prussian haircut. Usually his hair is long, sometimes unkempt and stringy, often infested with lice. Not that Quang inherently is filthy, for he isn't. He belongs to a race that, in the proper atmosphere, is as meticulous in dress and appearance as facilities allow. But Quang is at war. He lives in the swamps of the Plaine des Joncs (Plain of Reeds), in the Mekong Delta.

Quand would be little impressed with the "realism" displayed in some of our jungle and guerrilla training. For a few weeks once or twice at most in their careers, a small percentage of our infantry soldiers undergo ranger or recondo training, living briefly in the jungle. Quang lives like a jungle or swamp animal, and develops the instincts of one. His entire military career is spent under these primitive conditions, until victory or death overtakes him.

For Armstrong's starched and pressed fatigues, stand-up field cap, and black shiny boots, Quang substitutes two combat suits of unpressed, washed-in-the-canal calico noir, the black native dress worn by the peasants of the area to which his unit is assigned. Sometimes he transforms this into a "uniform" by attaching a colored armband or a scarf around his middle to more easily identify himself in a fire fight. He has never heard of thermal clothing. In place of that stiff cap Quang prefers the floppy French military jungle cap or a native helmet, properly camouflaged. On neither of these, however, has he ever considered the need for a Polaroid face piece or a microminiaturized printed-circuit radio. His cloth-and-rubber-soled shoes win easily over the leather boot, impractical in the jungle, which for almost a decade some people have been trying rather unsuccessfully to foist upon Asian soldiers. Quang has one pair of these canvas shoes. The communists have found that to fight guerrilla style you don't have to be a conformist, every man and unit looking exactly like all others.

When Quang lays out his nonconformist full field pack, for instance, you get a perfect example of what a "poor" soldier is. There is no eyewash, no never-used-except-for-field-inspection soap, razor blades and tooth paste, all gleaming neatly in their Cellophane wrappers. If he is so fortunate as to own a piece of soap, a tooth brush or a comb, you can be sure it is well worn. Besides clothing he has a three-meter rainproof nylon sheet, a mosquito net, a hammock, and some rope. This is his full field equipment.

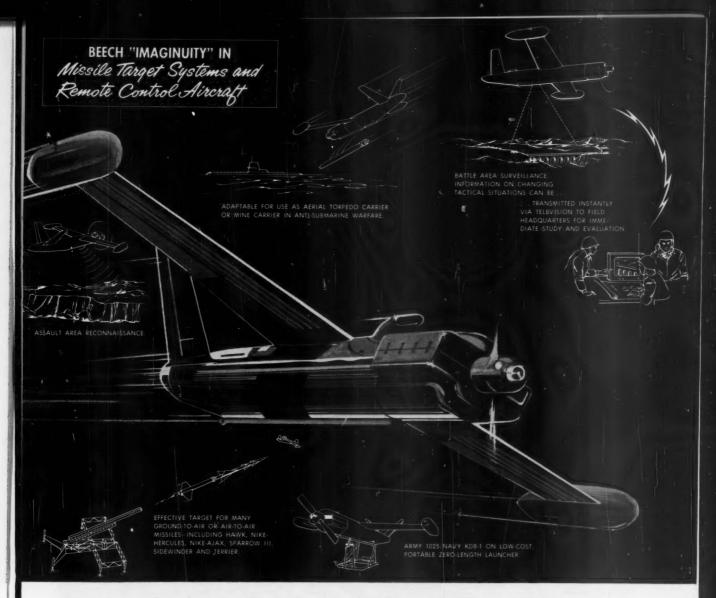
In a physical fitness test, Quang would draw a blast from his American squad leader, who might rate him "poor to fair" on his physical fitness score card. During his daily routine Quang has little opportunity for practicing squat jumps, situps and push-ups. But turn him loose among the paddies or in a jungle, even at night, and he'll probably outwalk, outcreep and outcrawl most of us who consistently average "excellent" on the formal test. More likely than not, he's been squishing through those same fields and jungles since he was a boy in charge of the family's water buffalo. And he does it very effectively, unaided by energy-thrust propellants.

As for equipment, Quang is one of the fortunate few. He has been issued a French MAS 36 rifle. It is old and scarred, ammunition is hard to find or capture, and there are no spare parts. But at least Quang is much better armed than some of his upland brothers who must creep and crawl to within a few yards of armored cars to get an aimed shot at the crew with that splendid weapon and substitute for the SS-11, the crossbow with its poisoned arrow. Although Quang is moderately equipped with light weapons, and certainly seldom welltrained in anything higher than individual and small-unit tactics, his side has the advantage in combat: it is on the offensive. Especially at night, Quang ranges forth from his "safe haven" in carefully planned assaults at the times and places of his choosing.

UANG considers it a privilege to be classed as an aggressive fighter in his outfit, not one of its usually unarmed "safe areas" defenders who must pick up a weapon from a casualty. The principal duty of such defenders is to dig panji traps and erect defensive positions. (A panji is a camouflaged pit at the bottom of which needle-sharp bamboo stalks are imbedded.) In the southern part of Vietnam most panjis are simply boards with nails driven through. In addition to mining these traps with hand grenades, the defenders usually urinate or defecate on the tips of the panji's slivers in hopes of inducing fatal infection or tetanus in victims. (This is one of the few occasions when Quang can be induced to relieve himself with anything like regularity, and especially in a pit. The sanitary conditions and medical standards under which he lives are appalling, and often a wound results in death.)

After panjis are dug Quang and his comrades need only sit and wait. The traps act as silent sentinels, an integral part of an ambush. The traps are cunningly concealed in cover which the enemy will instinctively seek when firing opens. (During one action a South Vietnamese infantry battalion lost one man killed by a poisoned arrow, 10 wounded by panji traps. During this two-day fight no casualties were inflicted by bullets or bayonets.)

The five squads in Quang's unit bivouac are (Continued on page 82)



Beech radio-controlled Army 1025 and Navy KDB-1...

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The progress of the West German government in building to its NATO commitment of 12 divisions is slow but as steady as the crawl of this West German recruit



# Building the Bundeswehr

The European frontier becomes safer as the Army of West Germany grows stronger

# Captain ROBERT B. ASPREY

STARTING an army from scratch is never a simple matter. And the task is doubly difficult when important citizens look on the effort with emotions ranging from an upraised eyebrow of sincere distaste to prolonged protestations sponsored by anti-military organizations, some of them acting on orders from the Communist Party. If the Soviet Union, in fact, had behaved herself after World War II, combined domestic and international opinion probably would have prevented West Germany from creating a new national military force: as it was, NATO voted to admit her in early 1955, and a few months later she put her first soldier into uniform.

The original goal of the new Bundeswehr was an army, a navy and an air force totalling one half million men. Subsequent reappraisal of her NATO mission reduced this figure to 350,000 with desired allocations of Army 220,000, Air Force 80,000, Navy 25,000, Territorial Defense 25,000.

As of late spring, 1961, total Army strength was 183,000, Navy 24,000, Air Force 67,000, Territorial Defense 17,500. Translated into fighting units, these figures mean for the Army three corps headquarters with support troops, four armored infantry divisions, two armor divisions, one airborne division, and one mountain division. Three more armored infantry divisions are now being activated and a fourth planned—a total of 12 divisions scheduled for the NATO line by 1963.

The Navy has nuclei for 22 eventual squadrons including destroyer, minesweeper, motor torpedo boat and submarine units, as well as a small naval air arm. Coastal commands in the North Sea and the Baltic ultimately will carry the greatest burden for protecting NATO flanks in these waters and of keeping open the coastal supply lines.

The Air Force already has two group head-

quarters, two air-defense divisions, five fighter-bomber groups, five transport groups and three fighter groups, plus conventional and Nike air-defense batteries. Flying modern jet aircraft that include the F-104, these squadrons are assigned to the two Allied tactical air forces of NATO's Central Europe and Northern Europe commands; their eventual goal is 1,300 modern combat aircraft.

This impressive effort has been and remains costly. In 1955, the Bundeswehr spent only \$23.8 million; by 1960 the military budget had shot up to more than \$2 billion. Including costs of occupation and mutual defense assistance, Germany's defense effort from 1955 to 1960 amounts to nearly \$11 billion plus almost another \$4 billion set aside for long-term procurement of weapons and equipment.

How has all this come about?

# Safeguarding controls

By 1955 the bite on NATO troops occasioned by the Korean war, the French wars in Indochina and Algeria, British crises in Africa and Cyprus plus an enormous manpower cut-back in Britain's army, had become so severe that a reappraisal of over-all strategy was in order. Clearly NATO forces in Germany could not be maintained at satisfactory strength, yet just as clearly Germany could not be abandoned. The area constituting the critical center of the NATO European shield measures 500 miles from the Baltic Sea to the Alps, and from about 280 to 180 miles east to west. This means, at its narrowest, a threehour trip by motor car; it means also a ten-hour trip by armor units sitting in eastern Germany and Czechoslovakia and bearing hammer-andsickle insigne over the postscripts of satellite

Too, for ten years the Western powers had



One of the 12 divisions will be an airborne outfit

occupied Germany—an expensive process conducive neither to the apparent growth of a democratic nation nor to military efficiency against the threat of Eastern aggression. Since for some time responsible German leaders had stated the Government's willingness to assume its share of Western defense, the obvious answer slowly emerged: after mutual agreement was reached on certain safeguards such as naval, air and firepower limitations, the Federal Republic of Germany became a full member of NATO.

NATO and the German Government having made up their minds, there remained the question of Germany making up her mind. Perhaps never in history has a new army been molded with softer gloves. Legislation establishing the Bundeswehr was introduced into the Bundestag (Federal Republic Parliament) by Dr. Konrad Adenauer's government. Vigorously opposed, especially by the socialists, the bills were eventually pushed through, but only after numerous restric-

tions and safeguards against military supremacy had been written in. In 1961, as in 1955, the Bundeswehr operates under rules as stringent as those of any YMCA hotel.

Control of the Bundeswehr rests in civilian hands: in peacetime its commander in chief is the civilian Minister of Defense; in war, the civilian Federal Chancellor. A civilian Defense Committee in Parliament sits as watch-dog of the entire Bundeswehr while a Defense Commissioner functions as protector of special legislation designed to insure the individual soldier's rights.

From a list of "citizen-soldier" laws about as numerous as those governing the original Roman empire, emerges a Soldier's Law that "regulates the duties and rights of the soldier, prescribing, for instance, that he be instructed in international law and given a course in civic rights free from all party politics"; a Military Complaint Order that gives the private soldier the right to correspond with anyone plus the omnipresent privilege of appeal to the Defense Commissioner in Parliament; the Military Penal Code which in peacetime puts the soldier in civil court for all but exceptional infractions; and the Compulsory Military Service Law that guarantees the patriotic recruit a maximum of 12 months of active duty before striking the reserve limbo of relaxation.

Compared to Soviet Army regulations, those of the Bundeswehr resemble nothing so much as the charter of an expensive boys' camp. But before the Westerner questions the result let him remember that Western military forces, particularly America's, were the guiding light in the establishment of the new, democratic Bundeswehr; second, that Allied observers are more and more impressed with the evident discipline and morale of the new units, not to mention their excellent and often outstanding operating performance.

# Manpower problems

Perhaps the most difficult of the limitations has been the one-year conscription law. Though a thorough recruiting campaign has attempted to "sell" the Bundeswehr to the Germany people, lingering suspicion combined with total employment has seen the voluntary recruitment program fall short of its quotas; the German youth may be guaranteed democratic treatment, but the fact remains that his pay is \$15 a month. Particularly hard put to gain volunteers, the Army would settle for a 45 per cent draftee strength but now has to operate with 60 per cent.

Originally the one-year limitation was not so bad because the state of organization and equipment prohibited keeping a soldier gainfully employed for over a year; indeed one advantage, albeit expensive, was to build up the present reserve strength of 140,000. Today, however, with 30,000 draftees coming and going every three months—the number required to maintain an annual increase of 60,000 men—many officials believe that the time has come to lengthen the training period. But this constitutes an extremely touchy political problem which is scarcely new: in 1937 when Hitler ordered the conscription period lengthened he was faced with student demonstrations! With the Bundeswehr almost but not quite completely accepted by the German people and with 1961 an election year, the current government is not likely to offer its rivals any such convenient political ammunition.

Extensive as are the present laws, the unfortunate fact remains that the road to Germany's various disasters has been paved with well-intentioned legislation subverted by powerful military or war parties. To the people of Germany and to the West the best safeguard against the ascendancy of the Bundeswehr over the civil power is the government's repeatedly declared desire for complete military integration within NATO. Not only have Germany's current leaders, particularly Dr. Franz Josef Strauss, Minister of Defense, and Chancellor Adenauer stressed this desire but also that for increasing political-economic integration of Germany with Europe—indeed, of Europe with America.

# Germany's mission in NATO

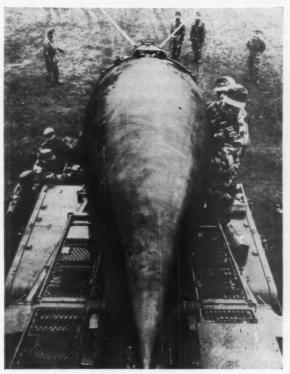
Militarily these facts justify the official statements:

► Germany has no operational General Staff. Her operations plans and orders come solely from

> American made Honest John rockets are used by the German Army, but without nuclear warheads

NATO headquarters in Paris, where of course the Bundeswehr is represented as are the armed forces of all NATO nations. As opposed to the traditional Great General Staff concept which established a military authority supreme from civilian control, the Bundeswehr is run by a staff structure within the Ministry of Defense. The Chief of the Federal Armed Forces Staff, General Friedrich Foertsch, answers both to the State Secretary and to Strauss, as do the separate service chiefs of staff. This responsibility, German officials emphasize, is administrative and logistical, not operational.

► Germany has integrated or will integrate all







West German fire power includes SS-11 antitank rockets, armor with accompanying infantry and 105 self-propelled howitzers

of her operational army, air and naval forces into NATO with the possible exception of the Territorial Defense force, a small command of static forces charged with special engineering, communications and security missions within the country. Whenever a German division, for example, attains 70 per cent of strength, it is "assigned" to NATO, Germany retaining the logistical responsibility. Strauss has gone on record numerous times, and very sensibly too, to the effect that if Germany had her way the logistical support also would become a NATO function.

► Germany has stockpiled two-thirds of her military supplies in foreign countries where in most cases the depots fall under the administration of the host country and she increasingly is using foreign bases for training and operations. At the most she maintains supply depots in Holland, Norway, Denmark, France and Belgium, and training areas and airfields in France and Turkey; she is negotiating for training areas, particularly tank-firing ranges, and naval bases in England. [Since this was written, Britain's Defense Minister announced that during the fall of 1961, a West German tank battalion of 600 men would take an "experimental" three-week course at a firing range in South Wales .- THE EDITORS.] If depots, bases and fields were closed down, militarily, she could last about a week.

▶ Germany plans no autonomous armament industry, and she is still subject to certain armament restrictions. Fifty per cent of her equipment and armaments comes from abroad. Economic common sense has dictated that she produce most of her soft military equipment such as uniforms and blankets, a lot of motor transport and some armaments, particularly rifles and machine guns; she has been granted construction licenses to build light armored cars and aircraft, and cur-





rently she is co-producing the F-104-G plane and the Hawk missile.

Her impressive effort to integrate the Bundeswehr into NATO was recently marked by General Lauris Norstad, Supreme Allied Commander, Europe, who stated that "the Federal Republic [has] been first in advocating the development of [its] own forces as a part of the Allied forces, rather than as national forces... first to advocate the integration of logistics."

Germany's mission in NATO is predominantly ground, that of strengthening the central European shield at the decisive points. This means that the new Army is primarily concerned with the problems of aggressive defense. This, coupled with her past military influence, explains both her desired Army profile and some of the differences that are emerging with other NATO forces, particularly the U. S. Army.

#### Organizational and tactical concepts

The terrain of central Germany, combined with a defensive mission calling for limited counterattack capability, decided the Army on a proportion of seven armored infantry divisions to two armor divisions plus one mountain and one airborne division. The armored infantry and armor divisions each muster 14,000 to 15,000 troops and will be maintained at 100 per cent strength with a wartime strength of 120 per cent. The mountain and airborne divisions, about 12,000 strong, are being trained for either a specialist or a conventional role.

In 1958 the German Army chose the all-purpose brigade concept under which a division bears an essential command responsibility and may be beefed up as desired. The standard armored infantry division now supports two armored infantry brigades of six battalions each (3,800 brigade strength); the armor division supports two armor brigades and one armored infantry brigade. In the field each brigade is self-sustaining for limited periods and is trained for conditions of both conventional and nuclear warfare.

Up to now the German Army has come under the strong influence of the U. S. Army as regards organization, training, tactics, equipment and weapons. In the first years her officers and noncommissioned officers were being schooled in various U. S. Army academies while translators were working around the clock to provide German versions of American manuals and training aids to support the inflow of U. S. equipment and weapons. Under the Mutual Assistance Program, America has given Germany millions of dollars worth of weapons and ammunition and continues to provide training teams throughout the Bundeswehr. Although our influence is still plain, Germany's military past, especially the Wehrmacht's

experience in Russia, began some time ago to exercise an influence that slowly has emerged as the Army has grown and as national and military confidence in it has increased.

While some American concepts have been adopted universally, others have been questioned and still others rejected either on the grounds of past military experience or as being inapplicable to the German military problem as defined by NATO.

Thus, there is little interest in helicopter-borne assaults, in the sky cavalry concept, or even in using the chopper as a forward area command vehicle: the German attitude that this machine is simply too vulnerable in land mass warfare, except in rear areas, probably stems from the high losses of senior commanders flying in the light Storch aircraft on the Eastern Front, a habit finally prohibited by supreme order. Again, the German Army is not interested in Special Forces operations or in long-range patrols; although ranking officers admit their usage in certain areas and situations, they believe that these units would prove impractical in a war against the Soviet Union where they would encounter enemy consolidation of rear areas and mass advance tactics.

The German concept of training and discipline

Typical of West German-U.S. cooperation is this scene of a German tank battalion commander working out plans with U.S. battle group commander

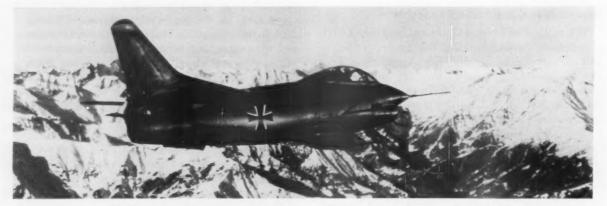


has played a part in certain decisions; for example, that of adopting the Spanish-German Cetme rifle over various Western models. A light, fully automatic and very fine rifle which I test-fired in Spain in 1957, the Cetme was criticized to the Bundeswehr by one American military authority on the grounds that with a fully automatic standard weapon the soldier will expend too much ammunition too soon. Fifteen years earlier the Wehrmacht had experienced this difficulty with the rapid-fire (1,200 rpm) MG42 machine gun, but only at first—proper training made it a perfectly practical weapon. The Bundeswehr believes this will also prove true with the Cetme and it is now being issued to the Army.

German veterans of World War II hold particularly strong ideas about armor. Tactically, they believe in a very flexible operational concept including fire from movement and thus in order of importance rate fire power, mobility (including range) and armor. America and England tend towards a stationary, armored fortress concept and thus in importance rate fire power, armor and mobility. This priority means a larger, heavier tank—the American M60 or the British Centurion—both of which were thoroughly tested by the Bundeswehr and found wanting. Among other deficiencies their extreme weight prohibited them from crossing most German bridges or from being transported on most railway systems without special equipment.

While filling their armor ranks with the American M48 as an interim measure, the Bundeswehr approached France: a series of technical conferences resulted in mutually desired specifications for a new tank. Each country then built prototypes which, in Germany's case, has resulted in a

(Continued on page 82)



West German air and naval forces are integrated into NATO's command





# McNamara and His Band

From the CP of the global frontier comes an exploratory estimate of the first six months' performance of those pioneering leaders in Pentagon-on-the-Potomac

#### By LLOYD NORMAN

From the bewildered looks on some Pentagon faces these days—even after the first six months of the McNamara whirlwind—they don't know what hit the place.

Only Secretary of Defense Robert S. McNamara and a chosen few of his top policy-makers are in the know. What decisions they have made or are making, what they have uncovered in the more than 146 studies they have inaugurated; and what changes they are forcing under the high pressure of urgency in the \$44 billion a year defense program are reported to the public in cautiously thinned-out gruel.

If they tell Congress more than they tell the public, it is not apparent from the censored blank spaces of Congressional testimony. The deleted portions are tantalizingly suggestive of disturbing new intelligence about Soviet weapons and intentions, of missile gaps that either exist or don't, of exciting promise of new U. S. weapons and intelligence sources—or of mundane, previously published data which the overly cautious, circumspect New Frontiersmen hope to conceal from Soviet spies by retroactive censorship.

But whatever they told Congress, the law-makers appeared satisfied—with some minor reservations—and stamped their OK on the major defense programs and changes requested by the Kennedy administration.

That McNamara came through his first campaigns on Capitol Hill with flying colors is a tribute to his masterful generalship, his prodigious memory and his incredible 70-hours-a-week pace that left the rest of his staff panting and red-eyed from lack of sleep.

McNamara impressed the Congressmen with his fluent tip-of-the-tongue replies, his exhaustive briefs running to 50 pages or more, his cold logic that permitted no escape, and his command of a massive array of facts. Unlike his predecessor from Michigan's motor industry, Charles E. Wilson, McNamara was properly respectful and courteous, but at the same time blunt and firm.

Over and over again, McNamara made it clear that he had personally studied the problems of the Nike Zeus, the B-70, the atomic-powered plane and the need for manned bombers, and that he had made up his mind. And with his open-and-shut mind made up, he was unshakeable.

With a hard glint in his eyes behind those half-rimmed glasses and that grim, humorless smile, McNamara expected agreement with his decision once he had carefully worked it out after studying all the options and alternatives, all the cost factors and the competing values.

For example, once he had decided that the Army needed only 5,000 more men—allowing it a total of 875,000—he took it for granted that General George H. Decker, Army chief of staff, agreed. It never occurred to McNamara that the Army might still persist in its original thinking that 925,000 men was a minimum need—even though bound by discipline to support officially the McNamara decision.

After this article was prepared, the Department of Defense received authority to increase Army strength by 133,000 to a total of 1,008,000. It was dubious at press time whether the Army would be able to obtain the necessary funds for the full authorization.

#### Fast, pragmatic, logical decisions

It is this intense single-mindedness, this total preoccupation with pragmatic, logical decisions, that must be understood before the McNamara phenomenon can be approached sympathetically.

McNamara is a young man in a hurry, impatient to get things rolling in a New Frontier manner, determined to sweep out the cobwebs and flush out the stagnant pools of tired, somnolent minds.

If his military advisers respond with clear and cogent ideas, well and good. If they don't, then McNamara turns to his eager, articulate "whiz kids"—young civilian mathematicians, economists, physicists and logicians who make up for their lack of battlefield experience and military knowledge by the impressive application of scientific analysis and mathematical logic couched in a jargon that sometimes makes old and simple ideas appear brilliantly new and complicated.

In his predilection for the mathematical logicians and cost analysts (in his Ford Motor Company days he lived at Ann Arbor, Michigan, and preferred the company of academic types rather than industrialists), McNamara has annoyed and frustrated the military traditionalists who believe firmly in the slower process of staff work rather than in the quick snap of decision-making from hurriedly gathered facts.

But it was the crying need for fast and firm decision-making that brought McNamara to the Pentagon. The complaint in the pre-Kennedy days was that there was too much temporizing and indecision. McNamara came to make decisions. He made it clear from the start that he would not sit as a judge selecting the best of various proposals that would trickle up to him from the slow distillation process of the military staffs. He was determined to lead, not be led; to initiate ideas, not sort out well-masticated compromises; to light fires under lukewarm kettles, and not drink tepid tea.

"We are in a critical period, I believe, or I would not be here, nor would I ask others to tear themselves from their lives to spend long hours here," he told me recently as he worked in his shirt sleeves through another long Saturday of conferences and stacks of papers. "This is the most important work I can do."

He said it with the tense edginess of a man who has worked too hard, who has driven himself and his staff to dig deeper and to look farther than any previous Defense Secretary, who has attempted to grasp and comprehend the intricacies of the vast military organization to the most minute detail.

With this intensity of purpose, McNamara has gripped the helm of civilian control of the Pentagon, with a sense of personal responsibility and command authority, as no other Defense Secretary has—except possibly Louis A. Johnson who rocked the military headquarters in 1949 with his summary decision to kill the Navy's supercarrier and his wholesale closing of bases in a relentless economy drive ordered by President Truman.

It is necessary—if we attempt to understand the future shape of the nation's defenses under McNamara—not only to recognize his personal qualities of impatience to get a big job done well, of tireless nose-to-the-grindstone work habits, of decisiveness based on cold reasoning and facts, and preference for deep thinkers and fast-decision makers.

But it is also important to examine how Mc-Namara views his mission and his image of the Defense Department.

#### Identifying the mission

McNamara has an A-B-C and a 1-2-3 kind of mind. He breaks his problems into orderly segments and he assigns higher and lower priorities. He believes in getting to first things first. Thus, when he came to the Pentagon, his approach was to tackle the first big job-the budget revision (of course, getting his staff together was also a top priority task). In the limited time available, he could only attempt a "quick-fix," to take care of the most urgent problems—such as strategic weapons (bombers and missiles), limited war needs, closing of marginal bases no longer needed, and weapons research. At the same time, he laid his plans for a long-term, searching examination of the defense program, strategy, manpower, reserves, weapons requirements in the future—the entire sweep of problems, and he parceled out assignments to task forces. The tasks now listed in a red-covered notebook reportedly number more than 150, and in his orderly management engineer's habit McNamara has assigned deadlines, follow-up reports and ball-carrying responsibilities to clearly identified officials who cannot pass the buck.

As McNamara approached his herculean tasks last January, his thinking probably was colored by certain preconceptions that he brought with him from industry and his academic world in Ann Arbor: that Pentagon practices were wasteful and inefficient; that there had been too much temporizing and delays in cutting or cancelling dubious or unpromising programs, such as the atomic-powered aircraft or the Snark missile; that competing and costly weapons systems had not been subjected to the relentless examination of cost effectiveness studies; that the defense structure badly needed reorganizing and slimming down; and that basic strategic concepts and the continuation of rival strategies needed to be sorted out and unified into a clear single statement of basic policies and goals.

McNamara never talked about these preconceptions although they sometimes creep out in his Congressional testimony or statements. He has since indicated that the waste and inefficiency in the Defense Department are relatively no worse



Paperwork and parley. The leader of the band at work and in conference with Franz Josef Strauss, Defense Minister of West Germany



than in industry—although he clearly does not condone waste and is dedicated to its elimination.

Although he indicated by his heavy reliance upon civilian advisers that he might have some doubts about the competence of his military advice, he has asserted his confidence in the Joint Chiefs and his highest regard for many of the military and civil servants in the Department. He rebuffs what he considers unwarranted criticism that he by-passed or ignored military advice, and that he tends to rely almost entirely for his advice upon a relatively small group of advisers—sometimes belittled with awed respect as the "whiz kids."

Press reports of rifts in the Pentagon between McNamara's civilian advisers and the military wounded him more than any of the news stories which he has denounced as inaccurate, irresponsible leaks. McNamara's personal view is that the press should report the facts of issues involving defense but should not play up quarrels and dissension which he believes are harmful to the national interest.

#### Relations with the military

When asked by Representative William E. Minshall (Republican, Ohio) about reports "that some high ranking retired and active admirals and generals are extremely upset that the Joint Chiefs are being bypassed and overruled on military decisions," McNamara replied: "I am happy to see our security is sufficiently tight so the retired admirals and generals you mention do not know what they are talking about. I do not know of a single case in which the Joint Chiefs have been by-passed."

McNamara said that his relationships with the Joint Chiefs are "closer than they have ever been. . . ." (General Lyman L. Lemnitzer, chairman of the Joint Chiefs, later agreed; he told the

House Military Appropriations Subcommittee hearing that "I don't feel that the Joint Chiefs of Staff are being by-passed. I am in constant touch with the Secretary. . . ." But Lemnitzer noted that "it takes time to establish working relationships" when a new regime takes over at the Pentagon. And Lemnitzer added that in the rush of reviewing the budget "obviously some short cuts and some quick analyses have been necessary.")

McNamara said he could not remember any disagreement between himself and the Joint Chiefs on "matters of strategy." Lemnitzer added that not all of the Chiefs' recommendations have been accepted, that the Chiefs were "batting better than .500," but "I don't know of any case where they [the Chiefs' views] were not considered."

McNamara said it is "undignified" for him to engage in public debate about his relationships with the Chiefs. In a related reference, about the criticism of the Joint Chiefs for their Cuban invasion blame, McNamara pursued the same attitude: "I don't believe we will serve the interests of our nation, particularly as our nation is viewed from abroad, if we enter into further discussion of this subject. . . . We must draw this discussion to a close at some time if we are to unite our nation and particularly, if, in the eyes of our allies and the world, we are to appear as an effective, efficient, strong and united nation."

That is the real key to McNamara's displeasure with press reports of Pentagon squabbling, the failures of weapons, or the waste and inefficiency. McNamara does not object to personal criticism—even though he doesn't like it any more than others similarly dedicated to a mission. But McNamara is deeply concerned about the image of national strength and unity that he wishes to preserve and propagate. That is his real motive, and may possibly explain his verbal slip when he implied he would not mind if the Russians got the



JOHN B. CONNALLY



ELVIS J. STAHR, JR.



EUGENE M. ZUCKERT

The Service Secretaries keep the troops marching to the beat of McNamara's band

impression that the Nike Zeus was an effective defense against their ICBM.

McNamara's mission is to keep that national image of strength a continuing reality—impressive enough to keep the peace.

#### Elements of policy and strategy

To carry out his personal assignment to which he has dedicated his total energy, McNamara must work within the framework of the over-all Kennedy administration national policy and defense strategy. Just what this policy and strategy is, is not always clear but they include these elements:

▶ The U. S., in concert with its allies, will seek to keep the peace and promote freedom against the spread of communism by maintaining an impressive strategic deterrent, flexible enough to avoid total nuclear warfare if possible, but potent enough to convince any aggressor that he has no choice but peace.

▶ The U. S. will attempt to assure world stability by guaranteeing in advance that we will not strike first, we will not start a war, nor will we take any military posture that might be provocative or trigger an accidental or miscalculated war.

► The U. S. will maintain nuclear-free forces to deter or quickly extinguish limited or small wars or to cope with communist guerrillas.

▶ Although no arbitrary budget limits will be imposed on national defense needs, fiscal conservatism requires that defense spending must be prudent and not wasteful. Obsolete, dubious or marginal weapons and programs that do not contribute effectively to defense upon cost analysis must be dropped.

In the opening days of defense planning by the Kennedy administration, the new strategy was

dominated by a feeling of optimism that the Soviet Union would come around to a more conciliatory attitude on arms control and atomic test bans. The emphasis at the time was upon reassuring the Kremlin that the U. S. was really not planning a surprise nuclear war; that we wanted to lay the groundwork for disarmament with mutual trust; that we wanted to eliminate any possibility of an accidental nuclear war; and that our massive retaliation doctrine was dead.

That meant, of course, that we would develop a military posture that did not require instantaneous automatic unleashing of our massive Strategic Air Command's nuclear force; that put a reliable leash of control upon our nuclear weapons; that our response to enemy warlike conduct would be "deliberate" and under the constant control of the highest constituted authority; that our strategic deterrent weapons would be under the complete control of this highest authority; that a substantial portion of our strategic weapons would be able to ride out a surprise enemy attack and be able to inflict unacceptable damage upon the enemy; and that we would have prompt and unambiguous warning systems of attack, and be able to identify with certainty the nature of the attack.

The emphasis of the Kennedy strategy was upon mobile and other strategic weapons that could survive an enemy ICBM attack, upon antiguerrilla forces, and upon a total military posture to provide a credible deterrent.

#### The fiscal approach

"When President Kennedy first gave us his instructions for the revision of the fiscal 1962 military budget," McNamara said recently, "he directed that we arrive at optimum force requirements, in the light of recent international developments and our own national security objectives, without regard to arbitrary budget ceilings. At the same time he directed us to make every possible effort to eliminate waste, duplication and unjustifiable expenditures of any kind, and to make the Department of Defense the most efficient organization we could devise."

This conservative fiscal approach is evident in the resulting Kennedy defense budget for fiscal 1962 of slightly over \$44 billion in new funds. This represents a net Kennedy increase of about \$2.2 billion—more than half of it for the Navy's 10 more Polaris submarines, the funds for which will be spent over the next three years or more.

Despite all the furor during the election campaign about the missile gap, the need for more limited-war forces and the urgent need for \$3 billion more in defense funds, the two Kennedy defense budget "add-ons" for fiscal 1962 are a somewhat pale reflection of the robust talk. If the Polaris submarines are set aside as long-term investments over three years, the net gain is about \$1 billion.

Military manpower was bolstered by only 25,-000 men—5,000 Army (mostly for antiguerrilla special forces), 3,000 Navy, 2,000 Air Force, 15,-000 Marine Corps—for a total of more than 2.5 million men.

McNamara's task groups, with their cold, mathematical, logical analysis, ruled out any substantial boost in ground forces or their provision for airlift and sealift—despite the animated concern for limited-war forces. Airlift got 53 more transport planes—including 30 C-135 jets. It was obvious that the planners had backed away from any capability of airlifting more than the advance elements of an airborne division to a far-off trouble spot. And the Army did not get the 50,000 more men it required at the least to form a fifteenth combat division, with airlift and sealift to move at least two divisions at any time.

Even in the much-vexed missile-gap area there was no big increase. McNamara said in Congressional testimony that "in the critical period of 1961 through 1963, we have increased our destructive capability close to 50 per cent." He cited the net addition of 60 Minuteman ICBMs (90 mobile Minutemen on railway cars "deferred" and replaced by 150 fixed Minutemen); 10 Polaris submarines with a total of 160 missiles, or a total of 220 missiles—minus 18 of the super-warhead Titan II ICBMs cancelled.

#### Adequacy of forces

In a recent summary of the fiscal 1962 budget changes, McNamara ticked off:

► A 50 per cent increase in the Polaris submarine force by the end of 1964.

- ► A 50 per cent increase in the portion of the strategic bomber force on 15-minute ground alert (from one third of the force to one half).
- ► A 100 per cent increase in the production capacity for Minuteman ICBMs in the event more of these are needed (from 30-a-month peak rate to about 60-a-month capacity).
- ► A 150 per cent increase in the size of antiguerrilla forces (from 2,000 men to 5,000).
- ► A 75 per cent increase in the modern longrange airlift capacity of the Military Air Transport Service (99 C-130E turboprops and 30 C-135 jets).
- ► A reorganization of the Army's division and reserve forces to increase firepower, mobility and flexibility.
- ► A very significant increase in funds for research and development of new non-nuclear weapons and military space projects.

In effect, the McNamara program would provide a strategic deterrent force by the end of 1964 of about 1,300 long-range missiles, including Polaris missiles on 29 submarines, 600 Minuteman ICBMs, and 108 Titan ICBMs and about 140 Atlas ICBMs. The missiles would be backed by some 600 B-52 jet bombers and a small number of B-58 faster but shorter-range jet bombers.

McNamara put the best face possible on his program. He did not mention the 1,000 B-47 medium jet bombers slated for the scrap heap or mothballs by 1964—a formidable bomb-carrying force that could unload thousands of megatons of nuclear destruction. Nor did he talk about doubts raised in Congress about the wisdom of relying so heavily upon untried missiles and cutting off production of B-52 and B-58 manned bombers after late 1962.

Nor did he take up the doubts expressed in Congress and the Pentagon about the adequacy of provisions for conventional forces in limited or sub-limited wars. He took the line of the policy laid down by President Kennedy in his 25 May message to Congress: "Even in the conventional field, with one exception, I find no present need for large new levies of men. What is needed is rather a change of position to give us still further increases in our flexibility, our adaptability, and our readiness." President Kennedy asked Congress for \$100 million more to buy the Army modern arms (raising the total to slightly more than \$2 billion-still a half billion dollars short of the Army's minimum goal for fiscal year 1962) and directed McNamara to modernize the Army divisions, stressing nuclear-free firepower increases and mobility.

But the House Appropriations Committee, in voting the Kennedy defense budget, said this was not enough for the Army's needs: "The Committee believes that even the steps proposed, as im-

portant and significant as they are, will not provide fully adequate forces having the flexibility, adaptability, and readiness desired by the President and which are so essential to our ability to cope with the growing problems of limited and sub-limited war. It is believed that after further study the Department of Defense will want to do even more toward preparing for such warfare."

#### Modernizing the Army

General George H. Decker, Army Chief of Staff, told me in an interview that he is encouraged by the Administration's new emphasis and concentration upon conventional forces and their need for nuclear-free firepower, mobility and communications. But, as a professional soldier of considerable experience in logistics and as Army Comptroller, Decker does not overlook the importance of adequate manpower and supplies of arms and equipment to give the Army's reorganized active and reserve components effective combat readiness.

"It is gratifying to the Army that the new administration is pursuing a policy stressing non-nuclear weapons and conventional forces," Decker said. "We in the Army have been advocating such a policy for several years. It should be made clear that this policy does not renounce the use of nuclear weapons, but it appreciates the need for conventional forces and non-nuclear weapons. It has

been evident for some time that the conventional forces must be strengthened and modernized.

"We feel that as we make our ideas and objectives better understood, we will see the Army in a better position than it has been for some time.

"The Army's procurement of equipment and missiles has been increased more than \$300 million in fiscal 1962 over last year. That is a substantial gain. However, we hope for still further progress in modernization, so that we can procure the modern equipment needed to produce forces with maximum combat potential.

"I do not want to state a firm dollar figure as our target for modernization. However, even at \$3 billion a year for arms procurement—\$1 billion more than in fiscal 1962—a number of years would elapse before the active army and its reserve components would be completely outfitted with modern equipment.

"The point is that while the active army has a lot of modern equipment, it is not completely equipped with the most effective materiel we have developed.

"There is a problem with respect to modern equipment in the reserve units. Quantitatively we have considerable stocks of older equipment, but it's the qualitative aspect I am concerned with. And even with the older equipment, we would have not enough for reserve units. Right now, the 10 reserve divisions that would have to be ready



The Joint Chiefs meet with Secretary McNamara. Going around the table clockwise, beginning at 7 o'clock: Lt. Gen. Barksdale Hamlett, USA; Gen. Clyde D. Eddleman, USA; Roswell L. Gilpatric, Deputy Secretary of Defense; Adm. Arleigh A. Burke, USN; Vice Adm. U. S. G. Sharp, Jr., USN; Gen. David M. Shoup, USMC; Maj. Gen. F. L. Wiesman, USMC; Lt. Gen. John K. Gerhart, USAF; Paul H. Nitze, Assistant Secretary of Defense; Gen. Thomas D. White, USAF;

Mr. McNamara; Gen. Lyman L. Lemnitzer, USA, Chairman, JCS; Lt. Gen. E. G. Wheeler, USA, Director, Joint Staff; Rear Adm. F. J. Blouin, USN, Secretary, JCS; Col. M. J. Ingelido, USAF, Deputy Secretary, JCS. This photograph was made before the recent retirement of General White and Admiral Burke and during a time when Gen. George H. Decker, USA, was out of the country.

for deployment in eight weeks under our new plan of improved readiness would run into shortages —especially in heavy equipment such as trucks, tanks, and guns."

General Decker was asked about the confusion over the Army's requirement for more manpower. He explained the Army's position by saying: "As is well known, the Army position before and during the fiscal 1962 hearings on the budget was that it would like to have 925,000 men. The decision was made to give the Army 875,000. The Army accepts that decision and is not fighting it.

"The people who have to make the decisions have to consider other factors besides military—political, economic, and so on. The Army will make the best use possible of what is provided."

#### The Army's needs

Decker said he did not discuss with President Kennedy the Army's requirement for 925,000 men or the need for 50,000 more men above the 875,000 allowance.

"With an increase of 50,000," General Decker said, "we could organize one more division, fill out units that are now under strength, and provide more combat and logistical support. For example, the four new mobile Hawk missile battalions for low-altitude air defense to be deployed with Seventh Army in Europe will take about 3,400 men. We have to take those men from other units which must be cut back or discontinued."

General Decker said that the 10 reserve divisions that would be readied for deployment in eight weeks would not take the place of or be equivalent to active army divisions.

"There is an erroneous impression that the Priority I [ready in three weeks] and the Priority II [ready in eight weeks] reserve divisions would be combat-ready," Decker said. "However, they are deployable overseas but would require additional training to be fully combat-ready. They would require work with joint commands and air support. This doesn't mean, of course, that they could not be employed in extreme emergencies or in relatively quiet zones. All of their people would have at least six months basic training and many would have combat experience, especially the officers. Right now our civilian components are in better shape than they have ever been in peacetime history.

"But, as everyone recognizes, to make the reserve readiness program work, we need funds for additional training and equipment for the reserve divisions and their support units, and for the civilian technicians assigned full-time to the divisions to keep their equipment in top shape.

"We would have to buy new equipment—probably issuing the bulk of the new equipment first to the active army divisions.

"The Priority I divisions would have 100 per cent—full strength—in manpower and equipment. Priority II units also would have 100 per cent of their equipment and the bulk of their personnel but would require individual reinforcements to reach 100 per cent strength following mobilization. The two divisions that would be ready for deployment in three weeks would require, under present planning, a total of about 89,000 personnel, including combat and support troops, in order to provide balanced division forces. The other eight divisions would require a total of around 275,000 men."

#### Ready active and reserve units

General Decker said the new Army reorganization of combat divisions would permit closer integration of the active and reserve units. A reserve brigade, for example, would be linked with an active army division having only two brigades. Or reserve battalions could be earmarked for assignment to active army divisions.

"It's easier to train separate brigades or battalions and then incorporate them into active divisions than it is to train a whole division," General Decker said. "This proposed integration of reserve elements into active army divisions will add true meaning to the term, One Army."

Whether the Army would be supplied the extra hundreds of millions of dollars needed to transmute the ambitious Kennedy promise of a combatready reserve force into reality was in doubt. The decision to give the reserve forces a full-fledged role in the first weeks of a war emergency was widely hailed as a courageous step. For the first time, a dead-earnest approach to making the National Guard and Army Reserve virtually part of the Regular Army was getting topside support. But would the funds back up the pretty words?

The House Military Appropriations Committee expressed the widespread doubt that "there is considerable concern over the plan presented to the committee to make them [reserve] available for combat much earlier than heretofore planned. In the opinion of the committee, this proposal should be most carefully considered, with regard to the effect on retention of reservists, and with regard to the feasibility of having these forces sufficiently trained to be effective in combat in such a short time."

McNamara had no plans to ask for more funds for the Army Reserve components. The plan was still being studied and formulated and the precise costs were not known. The fishy-eyed skeptics, familiar with the ways of the Pentagon, wondered whether the highly touted program to have 10 combat-effective reserve divisions ready

(Continued on page 84)

Without question the leader of McNamara's band is Mr. McNamara himself. The drummer (and assistant leader) is Roswell L. Gilpatric, Deputy Secretary. The bass fiddler is Thomas D. Morris, Assistant Secretary (Installations and Logistics). Trumpeters are Carlisle P. Runge, Assistant Secretary (Manpower), and Harold Brown, Director of Defense Research and Engineering. The trombonist is Arthur Sylvester, Assistant Secretary (Public Affairs). Cyrus R. Vance, General Counsel, is the clarinetist, and the saxophonists are Charles J. Hitch, Assistant Secretary (Comptroller) and Paul R. Nitze, Assistant Secretary, International Security Affairs.

### McNAMARA'S MUSIC MAKERS

Advance billing advertised a fouryear stand, but there are those who wonder if the walls of the Pentagon won't tumble long before

By LLOYD NORMAN

• Defense Secretary McNamara's "Music Makers" are an extraordinary phenomenon of the New Frontier. That's why they have been talked about, resented, and even feared.

Every new Administration brings a flock of new faces to the Pentagon. But this change-over had the surge and power of the wave of the future. On the whole the newcomers were fairly young, brainy, ener-



getic, articulate and propelled by a drive to get a job done in a hurry.

They bore an air strongly academic. Many were lawyers, businessmen, economists, mathematicians, physicists from industry or laboratories. They were dry behind their ears, most of them knew their way around Washington, many were pragmatists with political savvy.

But somehow the word spread that they were Whiz Kids—not in a derogatory sense. McNamara had been one of the ten whiz kids at Ford Motor Company, and the term sort of attached itself to the coterie of experts that had joined him in the Pentagon. A few had already moved into key places before the election and one or two had previous Pentagon experience.

Because the term whiz kids is applied loosely it sometimes includes any key official who came with McNamara. But that's unfair and inaccurate. And it should be stated clearly that the whiz kids are not a cabal or conspiracy dedicated to overthrow the military hierarchy.

When military professionals and veteran Pentagon officials complain about the young intellectuals, they are expressing resentment and frustration at being by-passed, left out, ignored, or overridden by newcomers who are either too busy or too mentally arrogant to consult the old-timers.

Much of the criticism of the New Frontiersmen is petty or misplaced. Some of the complaints are serious and well-meaning, such as:

- McNamara's top advisers are limited in their military experience, background and understanding.
   They are bright and articulate but they need military advice.
- The newcomers have a tendency to play close to the chest. They spend hours with each other in closeted conversations, but their staffs and others who feel they need to know are not tuned in.
- The newcomers leave the unhappy impression that the military are not too smart or at least that they are too slow and bogged down in "too much staff work."
- As a result, to speed up decisions McNamara's young advisers have set up an extra or "shadow" planning group superimposed on old-line Pentagon organizations. For example, McNamara's "task group" studies of strategic weapons, research, limited war, and military bases were not handled through routine or regular channels but by special task groups.

Despite denials to the contrary, the Joint Chiefs and other military planning and advisory groups in the Pentagon have been shouldered into secondary roles of supplying facts, not advice. The young scientists sift and analyze the facts, applying cost-effectiveness formulas; they feed the facts to computers or slide rules, and come up with their recommendations.

Even some of the Pentagon old-timers admit that some of this scientific analysis was long needed and that considerable benefits will result from these searching studies. But they fear that the New Frontiersmen are moving too fast and have not always consulted the wise experience of the military hands who could help them avoid pitfalls.

At the top level many of the New Frontiersmen have had military experience or Pentagon seasoning. McNamara himself is an Air Force veteran of World War II who knows the Defense Department from the inside and the outside of industry. His No. 2 man, Deputy Defense Secretary Roswell L. Gilpatric, is an urbane New York attorney, 54 years old, wise to the ways of Washington and the Pentagon. He is a former Assistant and Under Secretary of the Air Force in

the Truman Administration. He works smoothly with the military, respects them and has their respect.

The three service secretaries—as well as Gilpatric—are not acccurately listed as whiz kids. They have taken a more balanced, more broad-gauged approach toward the military—largely because of the nature of their roles. Navy Secretary John B. Connally, Jr., a Texas lawyer with considerable political experience, and Air Force Secretary Eugene M. Zuckert, a Washington lawyer and atomic energy consultant, have made strongly favorable impressions.

Secretary of the Army Elvis J. Stahr, Jr., former president of West Virginia University, is less well known and has moved more cautiously than the others to assert his influence.

Connally took firm hold of his department with the early assertion of his views to a convocation of Navy officers, leaving a "who's boss" impression. Zuckert, with less political flair, has made effective use of his experience as a former Air Force Assistant Secretary and member of the Atomic Energy Commission. Stahr, a Rhodes scholar, had Pentagon experience as a special assistant to the Secretary of the Army, as a consultant, and was a combat officer in World War II. He has the ability and the background to modernize the Army and represent its needs and policies to the New Frontiersmen.

On the secondary level, but highly influential in guiding McNamara's policies and programs, are such intellectuals and deep thinkers as Paul H. Nitze, Assistant Secretary of Defense for International Security Affairs; Dr. Harold Brown, the new Director of Defense Research and Engineering; Cyrus R. Vance, General Counsel, who is in charge also of organization studies; Arthur Sylvester, Assistant Secretary of Defense in charge of Public Affairs; Charles J. Hitch, Assistant Secretary of Defense for Installations and Logistics. These are only typical. There are many others.

Nitze, Brown and Hitch are probably the most influential because of their assignments. Nitze, a gray 54-year-old, a former investment banker and foreign policy expert who held key posts in the State Department, works with little fanfare in planning on arms control, atomic tests ban, NATO policy, and international crises such as Berlin.

Nitze has been criticized in some quarters as being too much oriented toward the State Department, too much committed to limited war and conventional arms as opposed to nuclear weapons. Because he does not talk much in public—except for an occasional speech—Nitze's views are not too well known. He appears to work well and relies considerably on his military advisers, but he brought strong views on military strategy with him from his work at the Washington Center of Foreign Policy Research.

Dr. Brown, 33-year-old atomic physicist who has worked on the H-bomb and other nuclear weapons, slipped into his Pentagon chair with ease. He listens to logic, is willing to change his mind if new facts or viewpoints are more persuasive, but he has firm concepts about future weapons based upon the best scientific information he can obtain. He mixes with the military, understands their viewpoint.

Hitch, 51 years old, an economist and operations research analyst who recently was Chairman of the Research Council at RAND Corporation, has been the target for much of the Whiz Kid resentment. Except for his age, he is well qualified as a Whiz Kid. He was a Rhodes scholar and was co-author of the Pentagon's current "bible" on fiscal management, The Economics of Defense in the Nuclear Age.

Quietly unassuming, courteously patient with those who haven't read his book or don't understand his complex concepts, Hitch has undertaken what is probably the most difficult of tasks—a functional analysis of the defense budget by "program packages" to determine which weapons systems and programs are most effective on a cost basis.

Basic strategic studies which could revolutionize defense planning and programs are being prepared by Hitch's staff and young scientist-analysts under Nitze. Key figures in this far-reaching work are little-known names outside the Pentagon: Harry S. Rowen, Deputy Assistant Secretary for Policy Planning and National Security Affairs under Nitze, formerly with RAND Corporation and the Harvard University Center for International Affairs; and Alain Enthoven, Director of Weapons Systems Planning under Hitch and also a RAND Corporation graduate.

It was the influx of RAND Corporation scientists which gave rise to the rumor that these young scientists would be making military policy. In fact, they have had deep influence on McNamara's policies and planning.

What McNamara will do to improve communications within the Pentagon or to provide for better relations with the press will depend upon how much advice he accepts from the experienced hands on his staff. Unfortunately, McNamara and his press advisers started out with a tendency to distrust newsmen and the military. McNamara began by squelching admirals and generals who talked on foreign policy matters, by trying to suppress any military data that might help the Russians under the broadest definition, and by trying to curb press access to news sources that might result in controversy or inside information he is not ready to release.

But it's the very fact that his Whiz Kids work in isolation—without revealing their doings to other Pentagon officials or to the press—that has given rise to the suspicion, distrust and resentment.

Much of what McNamara's music makers are playing may be legitimately a military secret. But a considerable portion—and the general nature of the work—must be made available to the military and the general public if the new concepts and programs are to be understood and supported.



# Alaska's Willow Freeze

Looking northward, the global frontiersman sees unlimited opportunity for realistic training maneuvers over the forty-ninth state's trackless mountains and valleys

#### Colonel WILLARD PEARSON

Pollowing Exercise Willow Freeze, a maneuver conducted in Alaska during February 1961 to train STRAC forces in cold-weather operations, one participating commander observed: "I would like to say that so far as I am personally concerned, this is the best maneuver I have ever been associated with. I think it has everything short of shooting itself—the vast terrain, ruggedness, and the employment of troops in my opinion was well worth while and well done!"

This realism sprang from a concept of operations which embodied these factors:

► Commanders faced an actual rather than a "shadow" aggressor: opposing forces were matched with about the same capabilities.

► There was no "canned" scenario; it was a free maneuver with a minimum of controls.

► An area was selected which exploited the harsh weather and undeveloped terrain that characterize the subarctic regions of Alaska.

► A "no-fly" line was established for Army

► A wide variety of operational requirements was introduced.

These guide lines created a realistic maneuver environment which in turn produced a balanced play of tactics, logistics, and intelligence.

Willow Freeze was held in the Copper River basin about midway between Fairbanks and Anchorage. The maneuver site, larger than Delaware, comprised 1,350,000 acres of rugged, undeveloped terrain bisected by the west fork of the Gulkana River.

The southern half of the area is a flat, undulating plain, broken by many lakes and streams and covered with brush and sparse to dense woods. The northern portion, lying in the foothills of the Alaskan Range, includes elevations to 5,000

feet, numerous streams and lakes, and is sparsely wooded. Snow cover varied from 15 inches in the south to five feet in the northern sector. Temperatures ranged from minus 37 degrees to plus 21.

#### **Balanced forces**

Two reinforced battle groups, one infantry and the other airborne, opposed each other. They had approximately the same capabilities. Each was supported logistically by a direct support group—the slice of the infantry division's technical services necessary to support a reinforced battle group.

The battle groups were supported by attached H-21 helicopters, tanks, armored personnel carriers, engineers, artillery (pack 75s, 105 SPs and the Chopper John rocket) and military police, Army Security Agency, and military intelligence personnel. Each commander was provided a platoon of twin 40mm "dusters" for forward area air defense against Army aviation and Air Force planes on strafing missions.

A company of Scouts of the Alaska National Guard (including Eskimos from Unalakleet and Indians from Fort Yukon) added local color and furnished reconnaissance elements for both sides. Special Forces teams under maneuver director headquarters (MDH) conducted operations on the Alaska periphery.

Regular, National Guard and Reserve elements of the U.S. Air Force furnished troop carrier, tactical photo reconnaissance and tactical fighter support. Approximately 6,500 Army and 300 Air Force troops participated.

#### A free maneuver

U.S. Forces (1st Airborne Battle Group, 187th Infantry, 82d Airborne Division) parachuted and airlanded into the southern edge of the maneuver area. Aggressor (1st Battle Group, 23d Infantry,



Aggressors man snowed-in machine-gun position



M41A1 tank crosses log bridge over frozen river

U.S. Army, Alaska) moved via surface transport to an assembly area in the northern sector. Separated by 60 miles of rugged Alaskan terrain, opposing commanders were given a mission type order: find the enemy and destroy him!

Except for a limited amount of directed play and restrictions imposed by maneuver boundaries and a no-fly line, Exercise Willow Freeze was a free maneuver. Commanders were allowed wide latitude in employing their lorces.

Reminiscent of the early days of the Korean War, commanders were required to move out in a meeting engagement and devise a scheme of maneuver to defeat the advancing enemy. They were encouraged to employ imaginative tactics in their deployment to contact.

From the word "go," the method of accomplishing the mission had to be kept uppermost in the commander's mind. Throughout the exercise, leaders were faced with major tactical and operational decisions in these areas: initial formation and deployment of forces in a movement to gain contact; protection of open flanks; fire support; communications and control; initial and projected scheme of maneuver on contact; and security.

A real challenge was created by the opportunity to fight against a force of equal size in a free maneuver, over undeveloped terrain, under winter conditions in the North, on a mission type order. It provided a backdrop for as realistic a maneuver as is possible in peacetime. It appealed strongly to the competitive spirit of the American soldier.

It gave commanders and their staffs an opportunity to pit their professional skills against a real opponent deployed to their front.

This challenge—and the opportunity—generated a spirit, an interest, and an enthusiasm that permeated all ranks. Opposing commanders and their staffs not only tried to outfox each other, but at times they tried to outwit MDH to gain a real or imagined advantage.

#### Influence of weather and terrain

Ignorance of weather and terrain can be as disastrous as lack of knowledge of the enemy. Exercise Willow Freeze was realistic because it forced commanders to consider the effects of weather and terrain on current and projected operations.

The unpredictable and variable weather conditions in adjacent areas and within the same terrain compartments complicated the timing of the airborne operation. Weather delayed the build-up of the airborne troops scheduled for the first day of the exercise.

During the early phase of the exercise, Aggressor's primary scheme of maneuver included extensive use of helicopters. The weather was excellent. Using five H-21 helicopters, Aggressor airlifted 485 men and 18 tons of equipment 25 miles in nine hours to seize key terrain. Continued favorable weather enabled him to reinforce and resupply these units. On the other hand, during the latter stages of the exercise snow and fog grounded all Army aviation for about two days.



Green smoke bomb guides parachutists to drop zone near Fort Richardson

The weather can affect the timing and success of an air-mobile operation as much as the disposition of enemy forces.

In the pre-maneuver training phase, unseasonably warm weather precluded thorough acclimatization to the cold. During the maneuver phase subzero temperatures caused some cold-weather injuries. Because of rapid weather changes, a commander must "prepare for the worst and hope for the best."

Extreme cold weather brought troubles in transportation, communications and morale. Vehicles were difficult to start and maintain; radios were less reliable; and morale deteriorated when hot meals and warming tents were not regularly available. Weather added to the realism of Exercise Willow Freeze because commanders had to recognize its effects on operations. Only aggressive leadership, active and alert supervision, and trained troops can overcome the adverse effects of subzero temperatures.

The lack of a well-developed road net forced commanders to evaluate the terrain realistically. For their initial scheme of maneuver, leaders had to select avenues of approach over virgin country. Similarly, the enemy's likely avenues of attack had to be analyzed. The primitive nature of the ground raised problems in land navigation. Other aspects of terrain analysis included route reconnaissance; selection, construction and maintenance of main supply routes; selection of landing zones and drop zones; analysis of trafficability

Five-ton truck precedes advance party in search of ford over creek



under existing ice and snow conditions; crossings of frozen lakes, rivers and streams; camouflage; and finally, the continuous study of key terrain and its effect on projected offensive and defensive operations.

The lack of developed lines of communications and the influence of the weather (that is, trafficability of main supply routes, ice thickness on crossings, air resupply, and the like), forced commanders to consider the impact of logistics on operations. The supply of POL was particularly important. Tactical vehicles would have grounded to a halt, vehicular radios would have become ineffective, and soldiers would have suffered coldweather injuries had fuel not been delivered to front-line units. Logistics had a big play in Exercise Willow Freeze because commanders had to overcome the reduced mobility imposed by weather and terrain to move their units-first, in making contact, and second, in supplying them and maintaining their equipment once the fight was joined.

#### No-fly lines for Army aviation

In combat a commander rarely enjoys the luxury of knowing the enemy's numbers, location and direction of movement. Often during peacetime maneuvers he obtains this information through unrealistic employment of Army aviation. To develop realism, no-fly lines were established. In *combat* there is a no-fly line! It is that imaginary line beyond which a prudent commander would not send Army aviation because of unacceptable losses.

The no-fly lines established for each side during Exercise Willow Freeze were adjusted as the front lines advanced. No-fly lines should be recognized as an administrative device for simulating the restrictions in the employment of Army aviation that exist on the battlefield. They added realism by preventing indiscriminate and unrestricted aerial reconnaissance of the enemy's front lines and rear areas. This would have immediately compromised a logical, orderly and realistic build-up of the intelligence situation. Commanders were thereby forced to employ every possible means at their disposal to develop the enemy picture-through patrols, ground and aerial operations, tactical and photo reconnaissance aircraft, and POWs.

Upon request to the maneuver director, units were authorized to conduct air-mobile operations beyond the no-fly line. Umpires were alerted and given an opportunity to evaluate these activities. Aircraft shot down were ruled out of action and withdrawn from the problem.

The no-fly line forced realistic intelligence play by commanders. In addition to the impact of the weather and terrain previously discussed, other factors which insured active S2 participation were the movement to contact (an operation in which the development of the intelligence picture becomes primary), and the importance of land navigation and map reading in undeveloped terrain.

Riflemen of battle group board H-21 helicopters for airlift to forward areas





Airborne infantry move through snow-covered gravel pits in search of Aggressor patrols

Snow touches prosaic POW enclosure with a touch of beauty



A wide variety of operational requirements was introduced to tax the mental and physical stamina of commanders and their staffs, and to test their reaction in a realistic combat environment.

Commanders were required to employ a combined-arms team in an independent role. Nuclear blasts were delivered by air, rocket, and artillery, and atomic demolitions were played or made available. Both sides employed psychological warfare. Electronic jamming, communication electronic countermeasures, and imitative communication deception were practiced. M10 smoke tanks mounted on L-20 aircraft sprayed troops with a weak solution of tear gas (CNB diluted with alcohol to lower freezing point) to test reactions to a chemical attack. Employment of mobile task forces, attack and defense of rear areas, combat deception, and river crossings were included in the normal development of the problem as forces moved to contact.

In the air, tactical reconnaissance and fighterbomber support were available for pre-planned and on-call missions. Forward air controllers were provided by the Air Force. Air resupply by heavy drop was employed, and Army aviation was used for liaison, observation, surveillance, reconnaissance, fire support, courier, photography, medical evacuation, troop lift, aerial resupply, and radio relay. The attachment of a light helicopter platoon gave each side a capability to execute airmobile operations.

Special Forces teams were parachuted into five locations on the western periphery of Alaska. They underwent practical training in organizing an unconventional warfare sector, making target analyses, conducting area studies, selecting and marking drop zones, and training Eskimo Scouts of the Alaska National Guard in demolitions, communications, and markmanship. One platoon from U.S. Forces parachuted onto an abandoned airfield near Nome, and in conjunction with the Eskimo Scouts and Special Forces, destroyed an enemy complex.

Most of the objectives set forth in the training directive for Department of the Army and USARAL maneuvers were attained, with the possible exception of civil affairs. Even this might be included if credit is given the provost marshal's efforts in assisting the Department of Fish and Game in keeping track of the migrating caribou herds which roamed about the maneuver area during the exercise.

#### Lessons learned

Lessons having Army-wide significance were learned in Exercise Willow Freeze:

► The concept and principles employed in Willow Freeze provide useful guide lines to enhance realism of maneuver programs.

▶ Alaska, with its sparse population, undeveloped terrain, and rigorous climate, offers a realistic environment in which to train STRAC forces for worldwide deployment.

▶ An increase in the Army's maneuver program for northern operations is recommended in order to improve its ability to conduct a limited war. Experience of the last decade shows that the most likely locales for limited wars are the undeveloped countries around the periphery of the Soviet bloc. These countries have only primi-

tive communications facilities. By improving its ability to operate over the undeveloped areas of the north, where only primitive communications exist, the Army will enhance its ability to fight limited wars in other undeveloped areas.

▶ More extensive maneuvers in this area will also enhance the Army's combat capabilities to fight in the more temperate zones. For example, consider winter warfare in the mountains of western Europe, northern Italy, Greece, Turkey, the Urals, the Himalayas, and the mountains of Korea. The difficulties in these areas associated with extreme altitudes, weather and climate, the undeveloped transportation and communications, and remoteness from source of supply—all are identical with those encountered in our Far North.

SIDE from the training benefits, Exercise A Willow Freeze had the bonus effect of providing a realistic combat setting for testing the adequacy of current unit TOEs for sustained ground combat as well as new organizational concepts. Alaska has the same terrain, climate and environment found to a large degree in the northern areas of the Eurasian land mass. It is probable that at some future date major ground operations will be conducted on terrain similar to that found in our forty-ninth state. An understanding of the mobility, fire power, and communications problems that exist in the North is essential for planning and developing materiel to be used by the Army of the future. If we can overcome the difficulties of mobility in Alaska, where units are restricted and canalized by weather, terrain, and lack of communications, we will have taken a great stride forward in solving a greater problem: mobility on the nuclear battlefield.

The Army can capitalize on the many advantages accruing from a realistic maneuver such as Exercise Willow Freeze by increasing the number, scope, and frequency of STRAC training exercises conducted in Alaska's vast, trackless regions.







# Guerrilla Attack

The hard task of the Special Forces fighter is to eliminate communist guerrillas

This article is drawn from an address by Dr. Rostow before the graduating class of the Counter Guerrilla course of the Army's Special Warfare Center at Fort Bragg. Of the 80 students in the class, 63 of them were from 20 different nations and only 17 from the United States.

#### By WALT W. ROSTOW

When the Kennedy Administration accepted the responsibility of government it faced four major crises: Cuba, the Congo, Laos, and Viet Nam. Each represented a successful Communist breaching—over the previous years—of the Cold War truce lines which had emerged from the Second World War and its aftermath. In different ways each had arisen from the efforts of the international Communist movement to exploit the inherent instabilities of the underdeveloped areas of the non-Communist world; and each had a guerrilla warfare component.

Cuba, of course, differed from the other cases. The Cuban revolution against Batista was a broad-based national insurrection. But that revolution was tragically captured from within by the Communist apparatus; and now Latin America faces the danger of Cuba's being used as the base for training, supply, and direction of guerrilla warfare in the Hemisphere.

More than that, Mr. Khrushchev, in his report to the Moscow conference of Communist parties (published January 6, 1961), had explained at great length that the Communists fully support what he called wars of national liberation and would march in the front rank with the peoples waging such struggles. The military arm of Mr. Khrushchev's January 1961 doctrine is, clearly, guerrilla warfare.

Faced with these four crises, pressing in on the President from day to day, and faced with the candidly stated position of Mr. Khrushchev, we have, indeed, begun to take the problem of guerrilla warfare seriously.

To understand this problem, however, one must begin with the great revolutionary process that is going forward in the southern half of the world; for the guerrilla warfare problem in these regions is a product of that revolutionary process and the Communist effort and intent to exploit it.

#### The old order changes

What is happening throughout Latin America, Africa, the Middle East and Asia is this: old societies are changing their ways in order to create and maintain a national personality on the world scene and to bring to their peoples the benefits modern technology can offer. This process is truly revolutionary. It touches every aspect of the traditional life: economic, social and political. The introduction of modern technology brings about not merely new methods of production but a new style of family life, new links between the villages and the cities, the beginnings of national politics, and a new relationship to the world outside.

Like all revolutions, the revolution of modernization is disturbing. Individual men are torn between the commitment to the old and familiar way of life and the attractions of a modern way of life. The power of old social groups—notably the landlord who usually dominates the traditional society—is reduced. Power moves towards those who can command the tools of modern technology, including modern weapons. Men and women in the villages and the cities, feeling that the old ways of life are shaken and that new possibilities are open to them, express old resentments and new hopes.

This is the grand arena of revolutionary change which the Communists are exploiting with great energy. They believe that their techniques of organization—based on small disciplined cadres of conspirators—are ideally suited to grasp and to

hold power in these turbulent settings. They believe that the weak transitional governments, that one is likely to find during this modernization process, are highly vulnerable to subversion and to guerrilla warfare. And whatever Communist doctrines of historical inevitability may be, Communists know that their time to seize power in the underdeveloped areas is limited. They know that, as momentum takes hold in an underdeveloped area-and the fundamental social problems inherited from the traditional society are solvedtheir chances to seize power decline. It is on the weakest nations-facing their most difficult transitional moments-that the Communists concentrate their attention. They are the scavengers of the modernization process.

#### Scavengers of modernization

They believe that the techniques of political centralization under dictatorial control—and the projected image of Soviet and Chinese Communist economic progress—will persuade hesitant men, faced by great transitional problems, that the Communist model should be adopted for modernization, even at the cost of surrendering human liberty. They believe that they can exploit effectively the resentments built up in many of these

areas against colonial rule and that they can associate themselves effectively with the desire of the emerging nations for independence, for status on the world scene, and for material progress.

This is a formidable program; for the history of this century teaches us that communism is not the long run wave of the future towards which societies are naturally drawn. On the contrary. But it is one particular form of modern society to which a nation may fall prey during the transitional process. Communism is best understood as a disease of the transition to modernization.

What is our reply to this historical conception and strategy? What is the American purpose and the American strategy? We, too, recognize that a revolutionary process is under way. We are dedicated to the proposition that this revolutionary process of modernization shall be permitted to go forward in independence, with increasing degrees of human freedom. We seek two results: first, that truly independent nations shall emerge on the world scene; and, second, that each nation will be permitted to fashion, out of its own culture and its own ambitions, the kind of modern society it wants. The same religious and philosophical beliefs which decree that we respect the unique-



Colombian artilleryman



Pakistani soldier

### Among the global missions: to aid underdeveloped

Taiwan rifleman



ness of each individual, make it natural that we respect the uniqueness of each national society. Moreover, we Americans are confident that, if the independence of this process can be maintained over the coming years and decades, these societies will choose their own version of what we would recognize as a democratic, open society.

#### Commitments to freedom and independence

These are our commitments of policy and of faith. The U. S. has no interest in political satellites. Where we have military pacts we have them because governments feel directly endangered by outside military action, and we are prepared to help protect their independence against such military action. But, to use Mao Tse-tung's famous phrase, we do not seek nations which "lean to one side." We seek nations which shall stand up straight. And we do so for a reason: because we are deeply confident that nations which stand up straight will protect their independence and move in their own ways and in their own time towards human freedom and political democracy.

Thus, our central task in the underdeveloped areas, as we see it, is to protect the independence of the revolutionary process now going forward. This is our mission and it is our ultimate strength.

For this is not-and cannot be-the mission of communism. And in time, through the fog of propaganda and the honest confusions of men caught up in the business of making new nations, this fundamental difference will become increasingly clear in the southern half of the world. The American interest will be served if our children live in an environment of strong, assertive, independent nations, capable, because they are strong, of assuming collective responsibility for the peace. The diffusion of power is the basis for freedom within our own society; and we have no reason to fear it on the world scene. But this outcome would be a defeat for communism-not for Russia as a national state, but for communism. Despite all the Communist talk of aiding the movements of national independence, they are driven in the end, by the nature of their system, to violate the independence of nations. Despite all the Communist talk of American imperialism, we are committed, by the nature of our system, to support the cause of national independence. And the truth will out.

#### The vitals of the victory

The victory we seek will see no ticker tape parades down Broadway—no climactic battles, nor great American celebrations of victory. It is a



Ethiopian machine gunners



Argentine artilleryman

### ations acquire the sinews of independent security

Iranian armor



victory which will take many years and decades of hard work and dedication—by many peoples—to bring about. This will not be a victory of the United States over the Soviet Union. It will not be a victory of capitalism over socialism. It will be a victory of men and nations which aim to stand up straight, over the forces which wish to entrap and to exploit their revolutionary aspirations of modernization. What this victory involves—in the end—is the assertion by nations of their right to independence and by men and women of their right to freedom as they understand it. And we deeply believe this victory will come—on both sides of the Iron Curtain.

If Americans do not seek victory in the usual sense, what do they seek? What is the national interest of the United States? Why do we Americans expend our treasure and assume the risks of modern war in this global struggle? For Americans the reward of victory will be, simply, this: it will permit American society to continue to develop along the old humane lines which go back to our birth as a nation—and which reach deeper into history than that—back to the Mediterranean roots of Western life. We are struggling to maintain an environment on the world scene which will permit our open society to survive and to flourish.

#### The dimensions of independence

To make this vision come true places a great burden on the U.S. at this phase of history. The preservation of independence has many dimensions. The U.S. has the primary responsibility for deterring the use of nuclear weapons in the pursuit of Communist ambitions. The U.S. has a major responsibility to deter the kind of overt aggression with conventional forces, which was launched in June 1950 in Korea. The U.S. has the primary responsibility for assisting the economies of those hard pressed states on the periphery of the Communist bloc, which are under acute military or quasi-military pressure which they cannot bear from their own resources; for example, South Korea, Viet Nam, Taiwan, Pakistan, Iran. The U.S. has a special responsibility of leadership in bringing not merely its own resources, but the resources of all the Free World to bear in aiding the long-run development of those nations which are serious about modernizing their economy and their social life. And, as President Kennedy has made clear, he regards no program of his administration as more important than his program for long-term economic development, dramatized, for example, by the Alliance for Progress in Latin America. Independence cannot be maintained by military measures alone. Modern societies must be built, and we are prepared to help build them.

Finally, the United States has a role to play . . . in learning to deter guerrilla warfare, if possible, and to deal with it, if necessary.

#### A battle for the mind and spirit of man

I do not need to tell you that the primary responsibility for dealing with guerrilla warfare in the underdeveloped areas cannot be American. There are many ways in which we can help-and we are searching our minds and our imaginations to learn better how to help; but a guerrilla war must be fought primarily by those on the spot. This is so for a quite particular reason. A guerrilla war is an intimate affair, fought not merely with weapons but fought in the minds of the men who live in the villages and in the hills; fought by the spirit and policy of those who run the local government. An outsider cannot, by himself, win a guerrilla war; he can help create conditions in which it can be won; and he can directly assist those prepared to fight for their independence. We are determined to help destroy this international disease; that is, guerrilla war designed, initiated, and supplied, and led from outside an independent nation.

Although as leader of the Free World, the U.S. has special responsibilities which it accepts in this common venture of deterrence, it is important that the whole international community begin to accept its responsibility for dealing with this form of aggression. It is important that the world become clear in mind, for example, that the operation run from Hanoi against Viet Nam is as clear a form of aggression as the violation of the 38th parallel by the North Korean armies in June 1950.

In my conversations with representatives of foreign governments, I am sometimes lectured that this or that government within the Free World is not popular; they tell me that guerrilla warfare cannot be won unless the peoples are dissatisfied. These are, at best, half truths. The truth is that guerrilla warfare, mounted from external bases-with rights of sanctuary-is a terrible burden to carry for any government in a society making its way towards modernization. As you know, it takes somewhere between 10 and 20 soldiers to control one guerrilla in an organized operation. Moreover, the guerrilla force has this advantage: its task is merely to destroy; while the government must build and protect what it is building. A guerrilla war mounted from outside a transitional nation, is a crude act of international vandalism. There will be no peace in the world if the international community accepts the outcome of a guerrilla war, mounted from outside a nation, as tantamount to a free election.

The sending of men and arms across international boundaries and the direction of guerrilla war from outside a sovereign nation is aggression;

and this is a fact which the whole international community must confront and whose consequent responsibilities it must accept. Without such international action those against whom aggression is mounted will be driven inevitably to seek out and engage the ultimate source of the aggression they confront.

#### Alternatives to guerrilla aggression

I suspect that, in the end, the real meaning of the conference on Laos at Geneva will hinge on this question: it will depend on whether or not the international community is prepared to mount an International Control Commission which has the will and the capacity to control the borders it was designed to control.

In facing the problem of guerrilla war, I have one observation to make as an historian. It is now fashionable-and I daresay for you it was compulsory-to read the learned works of Mao Tse-tung and Che Guevara on guerrilla warfare. This is, indeed, proper. One should read with care and without passion into the minds of one's enemies. But it is historically inaccurate and psychologically dangerous to think that these men created the strategy and tactics of guerrilla war to which we are now responding. Guerrilla warfare is not a form of military and psychological magic created by the Communists. There is no rule or parable in the Communist texts which was not known at an earlier time in history. The operation of Marion's men in relation to the Battle of Cowpens in the American Revolution was, for example, governed by rules which Mao merely echoes: Che Guevara knows nothing of this business that T. E. Lawrence did not know or was not practiced, for example, in the Peninsular Campaign during the Napoleonic wars, a century earlier. The orchestration of professional troops, militia, and guerrilla fighters is an old game whose rules can be studied and learned.

My point is that we are up against a form of warfare which is powerful and effective only when we do not put our minds clearly to work on how to deal with it. I, for one, believe that, with purposeful efforts, most nations which might now be susceptible to guerrilla warfare could handle their border areas in ways which would make them very unattractive to the initiation of this ugly game. We can learn to prevent the emergence of the famous sea in which Mao Tse-tung taught his men to swim. This requires, of course, not merely a proper military program of deterrence, but programs of village development, communications, and indoctrination. The best way to fight a guerrilla war is to prevent it from happening. And this can be done.

Similarly, I am confident that we can deal with the kind of operation now under way in Viet Nam.

It is an extremely dangerous operation; and it could overwhelm Viet Nam if the Vietnameseaided by the Free World-do not deal with it. But it is an unsubtle operation, by the book, based more on murder than on political or psychological appeal. When Communists speak of wars of national liberation and of their support for "progressive forces," I think of the systematic program of assassination now going forward in which the principal victims are the health, agriculture, and education officers in the Viet Nam villages. The Viet Cong are not trying to persuade the peasants of Viet Nam that communism is good: they are trying to persuade them that their lives are insecure unless they cooperate with them. With resolution and confidence on all sides and with the assumption of international responsibility for the frontier problem, I believe we are going to bring this threat to the independence of Viet Nam under control.

#### Assassination of a rising culture

My view is, then, that we confront in guerrilla warfare in the underdeveloped areas a systematic attempt by the Communists to impose a serious disease on those societies attempting the transition to modernization. This attempt is a present danger in Southeast Asia. It could quickly become a major danger in Africa and Latin America. I salute in particular those among you whose duty it is—along with others— to prevent that disease, if possible, and to eliminate it where it is imposed. As I understand the course you are now completing, it is designed to impress on you this truth: you are not merely soldiers in the old sense. Your job is not merely to accept the risks of war and to master its skills. Your job is to work with understanding, with your fellow citizens, in the whole creative process of modernization.

From our perspective in Washington you take your place side by side with those others who are committed to help fashion independent, modern societies out of the revolutionary process now going forward. I salute you as I would a group of doctors, teachers, economic planners, agricultural experts, civil servants, or those others who are now leading the way in the whole southern half of the globe in fashioning new nations and societies that will stand up straight and assume in time their rightful place of dignity and responsibility in the world community; for this is our common mission.

Each of us must carry into his day-to-day work an equal understanding of the military and the creative dimensions of the job.

I can tell you that those with whom I have the privilege to work are dedicated to that mission with every resource of mind and spirit at our command.



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# Of Time and Terrain

Professional appreciation of military geography serves the global frontiersman well

#### By Maj. HARLAN G. KOCH

K NOWLEDGE of the country is to a general what a rifle is to an infantryman and what rules of arithmetic are to a geometrician. If he does not know the country, he will do nothing but make gross mistakes. Without this knowledge his projects, be they otherwise admirable, become ridiculous and often impracticable. Therefore study the country where you are going to act!" These instructions of Frederick the Great to his generals are crystal-clear.

The renowned Prussian had no monopoly on terrain appreciation. Generals have applied this or some related philosophy before and after Frederick. They knew that knowledge of the terrain in the theater of operations contributed greatly toward determining their best courses of action. Furthermore, they realized it would bring into focus the enemy's vulnerabilities, his capabilities, and his probable courses of action. The far-sighted commander can ill afford to ignore geography; it demands his closest attention.

Failure to appreciate the terrain has cost more than one general his hard-won laurels. Montcalm, believing the heights at Quebec were too steep to be scaled by a sizable force, directed all his attention to his front. The British general, Wolfe, carefully reconnoitered the heights and one night cleared them with 5,000 men. Early next morning his Redcoats surprised and decisively defeated the French. Death on the field saved Montcalm the ignominy of explaining his miscalculation.

In 1942 at Singapore the British experienced a similar backdoor entrance. All guns were fixed to fire toward Singapore Strait, so the Japanese cleverly pedaled in from the rear of the Malaya peninsula.

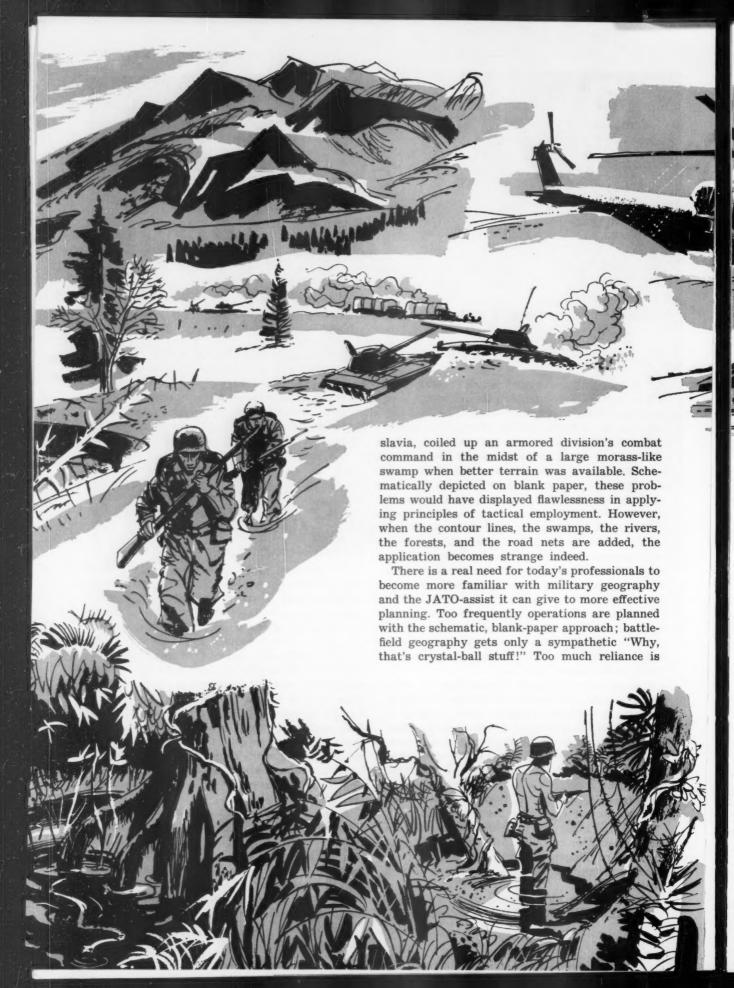
Napoleon was quite successful at destroying armies all over Europe, but had he insured himself

against the agonizing return trip from Moscow, he'd probably be resting more peacefully today. How could a commander of such stature ignore the many environmental features that caused his ultimate downfall? During previous campaigns Napoleon had demonstrated a remarkable faculty for adapting strategy and tactics to the geography of the battlefield. Perhaps his many successes made him less cautious. Possibly he relied too heavily on the psychological effect of his name. Unfortunately, the Russians called his hand. Unfamiliarity with geographical details resulted in the rout of one of the world's greatest armies.

#### The wave-of-the-hand approach

For the most part, professional soldiers know well the principles of war and all the tactical clichés. Some, however, draw goose eggs and arrows all over a map with no apparent appreciation of their ultimate impact on "the troops." The grease-pencil route for the armor attack plunges heedlessly through ravines and dense vegetation; it may or may not consider seasonal phenomena such as the floods of spring, the intense heat of summer, or the lack of concealing foliage during the fall. This is the wave-of-thehand-at-the-map approach. Little consideration is given to local relief, negotiability of terrain, obstacles, concealment, fields of fire, and adapting units to best use of the terrain. We joke at this approach, but some day it could become deadly serious.

Even at our Command and General Staff College, the application of military units to terrain, or the converse, too frequently falls short of realism. Recently, in a problem laid in Spain, the 122 tanks of an armored cavalry regiment were deployed in the precipitous Sierra Nevada Mountains while adjacent infantry units traversed comparatively flat lowlands. Another, set in Yugo-





placed on "nukes" or "the other man" to cover up otherwise sloppy preparations. We must implant in today's Army a more acute awareness of terrain and the effect of environment on men, vehicles, weapons, and maneuver. Leavenworth, the Army's senior tactical school, is the logical place to streamline a new and long overdue tactical approach to military geography.

There is a tendency to ignore military geography as though some stigma were attached to it. Usually it is associated with the field of intelligence, and possibly this connection in itself makes it something to be generally avoided. This stems from the current philosophy that prestige is associated more with "operations" than with "intelligence." We'll not belabor the point. The general conception of military geography is that it is a concern of specialists in the Pentagon, immaterial to the commander who must seize battle objectives through the sweat and blood of his troops. Unfortunately, some of our military geographers do little to dispel this misconception.

#### Relation of geography to tactics

The military geographer's knowledge is vital to the field commander, but his fare must be made more palatable. It must relate directly to the combat soldier in action, or to the units that support him.

Most commanders care nothing that the soil they are about to fight over is a combination of solonchak and solonetz. However, they would be keenly interested in knowing if it will be negotiable when wet. They don't care that the vegetation is xerophytic. They want to know how this vegetation, whatever it is, will affect concealment and fields of fire. The supporting engineer doesn't give a damn if the rocks in the area are precambrian. Can they be readily quarried and used in construction? Solonchak, podsol, xerophyteall part of the geographer's jargon-must be translated into common military English. The commander who must have an interpreter to understand the area analysis is not impressed. The geographer who fails to apply his art to the soldier's is not a military geographer. Too many of the current crop peer down their noses from Cloud 9. Instead of being essentially military. they wander off into the grand twilight of world structures and the global aspects of geography.

Geostrategy, geopolitics, world politics, and the like, border ever so lightly on military geography. These fields primarily stress the correlation of politics and economy to geography. Some of these topics also provide an excellent introduction to an area under military study. These Big Picture, introductory subjects are not, however, a part of military geography. They bear little immediate relationship to the soldier who must fight the enemy mile by mile over the ground. Studies of this kind are valuable to State Department planners, for politics are vital in the maneuvers of diplomats. If the diplomat fails, then the military commander finds himself committed. He is concerned with the ground and the weather, and how they will help or hinder him or his adversary. Politics and statistics on coal production won't help him take any objectives.

If geographical analyses were written expressly for the field commander, there would be little need to explain their usefulness. Their value would become readily apparent. As it is prepared today, the average area analysis offers little for the commander, whether he leads a company or an army. Too often he is given a recital in scientific jargon that results in his having to analyze the analysis. So he tosses it aside or calls for a briefing officer.

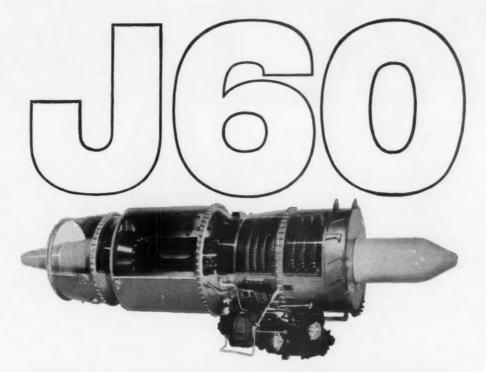
A properly prepared geographical analysis

eliminates all need for conjecture. It translates the full meaning of the geographical intelligence into militarily significant data. For example, here is a statement from the average run of current geographical analyses: "The central axis of the valley is swampy in nature, causing lateral movement to be difficult." Just what does that convey to the soldier? Most likely, that writer has not traversed a swamp in years with troops, or he doesn't understand the flotation characteristics of a 50-ton tank, or he has little real knowledge of the nature of a swamp. He's quibbling! To be safe, he says that lateral movement will be difficult.

Is this expressing geography in military terms? It can't be called military geography, for the commander is puzzled rather than informed. More than likely he will have to send a reconnaissance party on a perilous patrol to determine the swamp's true nature. The analysis told him only that a swamp was there—which he could have determined by reference to his map. "Any fool knows a swamp will make movement difficult, but how difficult?" Will it cause the infantryman to sink into 15 feet of muck, bubbles, and alligators?

No ground for armor. Rice paddies of Southeast Asia





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#### Good ground for armor. Plains and deserts of North Africa



Can the doughboy, holding his weapon overhead, wade it laboriously even if he must strain to keep his head above the surface, or is that swamp merely a mucky area where foot troops sink only to ankles or knees? Armed with a well-thought-out geographical analysis that provides accurate and reliable descriptions, the commander need not find it necessary to risk a reconnaissance party; the area analysis will already have given him the answer.

A useful study specifies what effects geography imposes upon military operations, and these conditions should be clearly described. Then the study will be really valuable to planners and commanders alike. For example, in a study concerning Southeast Asia, a quartermaster might note casually that high humidity is constant. Now if the factor of humidity was worth mentioning, shouldn't its effects be highlighted to illustrate their significance? The geographer could warn, for example, that salt tablets packed in paper containers should not be shipped there. These tablets absorb moisture from the constant humidity to the extent that the paper containers become soaked, they burst, and the tablets are transformed into a gooey mess. This environmental factor should not be ignored and left to the reader's conjecture. I understand that as late as 1959 the QMC was shipping salt tablets to Southeast Asia in glued paper containers, while the British pack theirs in tightly sealed glass jars.

I mention salt tablets not for their earth-shaking effect on logistics, but merely to illustrate how incomplete geographical intelligence pervades our system all the way down to salt-tablet supply. Perhaps some other aspect of logistics, as improperly calculated, some day could be the undoing of a STRAC outfit.

#### Effect of environment on health

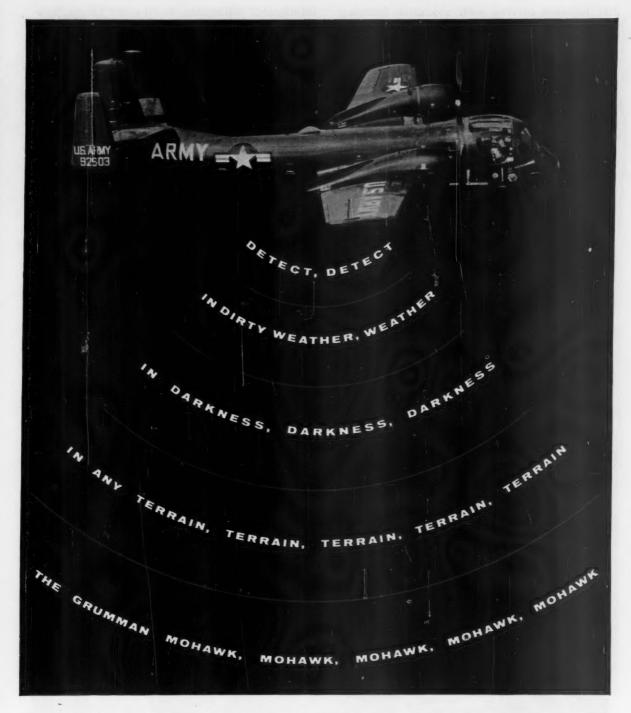
The medic in Laos might be interested in knowing that an accurate color segment map can be useful in indicating endemic malaria areas. Unlike in the United States, where malarial mosquitoes were most often confined to the warm swamps and bayous of the South, in Laos this type is

encountered in clear, cool, running streams in hills and mountains. There are numerous mosquitoes in the Laotian lowlands, to be sure, but few of the malarial type. They cannot survive in the muddy, sluggish, lowland waters. Armed with this cogent bit of information, the medic can plan in advance for the day when troops might have to take to the higher hills and mountains. The necessary nets, chloroquine, and repellents must be on hand.

Since Laos breeds the deadly banded krait and the neurotoxic cobra, the surgeon must also have antitoxins immediately available. Agonizing, paralyzing death can ensue as soon as 30 minutes after their bite. Helicopter evacuation will not entirely solve the problem; antitoxin itself sometimes produces lethal shock effects. The Army doctor and the troop commander should know all this before the problem is encountered, not afterwards as is so often the case. Few of us have had experience with cobras and banded kraits.

The geographical study should inform both the medic and the troop leader that in Southeast Asia leeches are a serious menace. Americans normally think of leeches thriving in moss-covered, stagnant millponds; not so in Laos. During the rainy season they cling to the damp leaves of bamboo forests and are swept off onto your clothing as you pass by. The ordinary species is wormlike, approximately an inch long, and about the color and thickness of pencil lead. They creep into your boots, and in an hour's time are so bloated from your blood that they expand to finger size. When they bite into your flesh you feel no pain. The leech discharges into the wound an anticoagulant that keeps the blood flowing steadily without clotting for 10 or 15 minutes before he lets go. More than one teak forester has been literally sapped of his life while he slept in the jungle.

The study might go a step farther to describe a safe way of sleeping in the jungle by illustrating methods used by natives. A night in a Laotian foxhole during the rainy season could indeed be a miserable, harrowing experience. Conditions should be described in the analysis. In this way some solution might be developed before the sol-



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dier becomes covered with ulcerated, festering sores.

#### Effects must be defined

Military geography is a scientific field that requires a knowledge of both geography and military operations, so that we can determine how one affects the other. It is not enough to say that this area is swampy or that these woods are dense. The effects must be clearly defined for both dismounted and mounted troops. Ambiguous statements such as "poor fields of fire" must be avoided. How define "poor?" It would be more useful to say, "Fields of fire in this area generally range only from 50 to 100 yards." When you say, "The rainy period lasts from May to September," are you including September or excluding it? Better to eliminate all doubt by saying, "May to September, both inclusive." A miscalculation by one month, particularly in areas of exceptionally heavy rainfall, could lead to disaster.

The effects of the foregoing statements are obvious to the commander and his staff. Unfortunately, the greater part of current area analyses ignore such specific descriptions, and in so doing they negate a large measure of their value. "Why waste my time with this mumbo-jumbo? Lay on a recon flight!" I know one successful armor commander who, when he considered his terrain

information inadequate, would order a tank crew to take him over a route in order to determine traversability. Had he been sure of his staff's analysis of the terrain he could have saved this valuable time for other pursuits.

Ours are fast-changing times, and the soldier constantly seeks new approaches to gunnery methods, logistics, organization, administration, missile systems, and the like, so as to keep abreast of developments. Military geography and our treatment of it also are overdue for improvement. The antique form for area analysis included in FM 101-5 could stand some modifications that would benefit the commander.

As late as World War II, the economist superimposed splotches of color across the world map to indicate economic complexes and announced that these were the potential areas of conflict. He seemed to tell us, "You need plan no further than for these areas; the rest of the globe is unimportant." Some of the Army's economic geographers and political scientists still hold doggedly to this philosophy, even though since 1945 our limited wars clearly indicated a new trend.

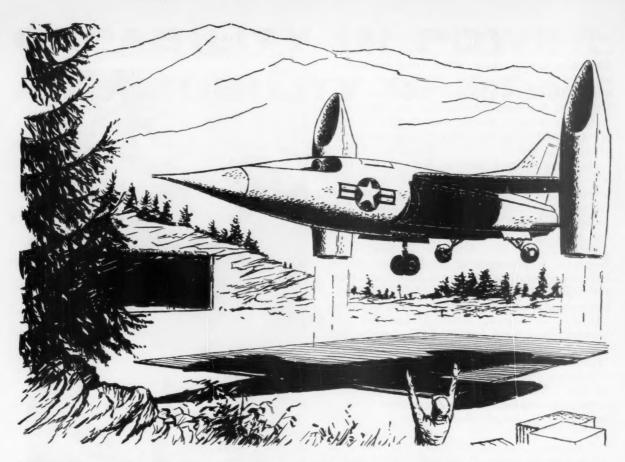
What of this new trend?

#### War has a fourth dimension

Four men, long dead, are largely responsible for the current need to review our approach to mili-

Little room for maneuver. Channelized approach across rice paddies





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tary geography. Wilbur and Orville Wright started the trend when they introduced a third dimension into warfare. When their innovation came of age it triggered developments more quickly than did that of their predecessors, Karl Marx and Friedrich Engels. The full impact of these four men on society and on the military scene in particular was not felt until the period after World War II.

Marx and Engels probably had no idea that with The Communist Manifesto they were inaugurating a fourth dimension in warfare: the ideological, large-scale battle for men's minds. This highly specialized brand of conflict-sometimes hot, sometimes cold-has made the entire world a potential battlefield. Although not new, it has become a highly systematized kind of warfare only since World War II. Fourth-dimensional warfare ignores those red splotches on the economist's commercial map. It penetrates such economic vacuums as Angola, Tibet, Afghanistan, and Guinea. These heretofore relatively unimportant areas have assumed a new significance to our "ready force" commanders. They know that some day they might be ordered, at a moment's notice, to fight a limited or a general war within those areas. Communism's fourth-dimensional warfare establishes no boundaries; the world is its objective.

Technology has eclipsed time. When the need arose, General Robert E. Lee could afford days to size up a battlefield while astride Traveller. Such a thing is no longer possible. Prior to defeating Montcalm, Wolfe camped within sight of his objective for 40 days so that he could properly study the area and determine his course of action. The time factor continues to become more and more precious. Today's commander must arrive at the battlefield with its geography already having been analyzed for him, and his course of action largely determined before his arrival. During the day of the horse, usually he had time to rectify gross mistakes. Today he invites disaster when he is caught short of time. There is not time to commandeer a tank for a hazardous, personal reconnaissance of tomorrow's battleground.

The Civil War general, whose plan of campaign was influenced by the operational range of his cavalry, had considerably fewer problems than his present-day successor, whose plans are based on the operational radius of long-range aircraft. Progress in transportation, from horse to strategic airlift, today provides the commander of a field army with a tremendous potential. It is possible within a period of hours to be transported to virtually any point on the globe. Today's commander has no time to summon experts to his war room, there to plan assaults at such remote places as Xieng Khouang in Laos or Ruwandiz Pass in

Defense? Yes. Attack? No.

The hedgerows of Normandy



Iraq. His preparations will have to be made in the air, en route to the scene.

#### No excuse for unpreparedness

In view of these requirements, we must take exhaustive steps to thoroughly document the military geography of every country of the world, and not merely the economic complexes. The evaluation of geography that affects tactics constitutes our most time-consuming task; the less detailed strategic approach is comparatively simple. The agencies involved in this work must be given the resources necessary for producing such intelligence, because our planning in this particular aspect of readiness is painfully inadequate.

World War II and Korea proved our inability to immediately provide accurate maps and geo-

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graphical intelligence. Crash projects were instituted that were expensive, inaccurate, and inadequate. Today, Tarlac Province in Luzon, or Katanga Province in the Congo could present conditions which would force the military commander to fight blindfolded. It is entirely possible that plans for such operations based on only vague tactical information could well result in debacles of the type of Dieppe or Dienbienphu. There is no excuse for unpreparedness in this field. A collection effort that is world-wide does, however, require resources and time. Time—that's what we're always short of!

Once information is collected on a world-wide scale, geographical studies should be prepared directly for the military commander's use, and not written in vague generalities. Keeping these studies up-to-the-minute is in itself a major project, for the elements of geography are continually changing. If the commander of STRAC and all his key subordinates had the faculty of Univac for ingesting thousands upon thousands of items of geographical information, perhaps such a collection effort wouldn't be necessary. Unfortunately, they haven't. Data relative to the earth's entire surface must be assembled, analyzed, and be accessible for study or reference.

Some day our commanders may have to alert their units for flight to a battle zone thousands of miles away. If these commanders can refer to geographical intelligence that is both accurate and applicable, their troops will be properly clothed, briefed, equipped, and armed. Upon arrival, they will already be familiar with the battle area; potential courses of action will have been made clear to them.

When military geography is condensed, refined, and meaningful, the commander must be told what this new type of intelligence has to offer, how it can be valuable in his planning. These studies must not wind up as dust-collectors in Government archives.

#### Troops must be told

Perhaps it would be advantageous for "ready force" units to conduct classes in military geography. If they did, officers and key noncommissioned officers would have a broader knowledge of those areas then prominent in the news. Subjects could be adapted to fit the audience and should teach how geography or environment affect otherwise normal operations. A course of this type would not only enlighten the soldier as to specific problems he might soon face; it would lead towards his knowing more about the many other critical areas of the world. In turn, the officers who must teach him would better understand the geography and tactical implications of trouble spots.

We pride ourselves on having the best-informed army, but often we fall by the wayside. According to an official study, during World War II there were more than 67,000 cases of frostbite and trench foot among U. S. forces in Europe. In contrast, the British 21 Army Group reported only 205 cases during the same period. Were British soldiers more rugged or were they merely better taught?

After arriving at the theater of operations there is little time left for teaching the soldier protective measures against extreme cold or heat, trench foot, malaria, dysentery, insects, and the like. It is somewhat late for pointers on specialized tactics that might be required as a direct result of environment.

This type of training would lay valuable groundwork against the day the "ready force" is suddenly alerted. Little time other than that during flight will be left for smoothing out the rough edges. We must carefully examine all measures that can shorten reaction time. A new look at military geography is one.

Encirclement in the snow. On the outskirts of Stalingrad in World War II



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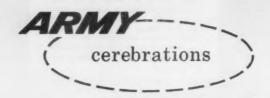
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## ADVISE - AND REPENT. Skill in counseling is a must for today's leader By WILLIAM R. TRACEY

We have always had problem soldiers and, human nature being what it is, we probably always shall have them. Nowadays we encounter a new type: the soldier with "a problem." He doesn't write Dear Abby letters to his company commander or first sergeant—at least not more than once. But today's soldier does ask for advice, about practically anything and everything.

You name a "problem," and any officer or non-commissioned officer with any amount of service with troops has been confronted with it. In fact, many claim that a sizable period of their duty-day, as well as much of their so-called off-duty time, is spent in trying to untangle the affairs of some of their well-meaning but misguided charges—or worse, trying to get the chronic cry-baby to stand on his own feet. Of course, all this is in addition to the job of keeping the few persistent, determined trouble-makers in check and preventing the occasional "trouble-prone" unfortunate from stumbling.

If this portrays anything like an accurate picture of the job of today's company-grade leaders, things are pretty rough for them. To deal effectively with such a variety of affairs would seem to require the combined wisdom, skills and patience of a psychologist, lawyer, policeman, chaplain, teacher, and physician.

These circumstances raise a number of questions of real concern to the troop leader. Am I responsible for these conditions? How far does my responsibility extend? Should I attempt to deal with personal affairs? How do I dispose of difficulties I know I can't handle? Most leaders feel responsible for helping their subordinates. Most of them try to do what they can, but often they wonder whether they are proceeding correctly.

Many factors dictate a leader's reaction when asked for help. His authority, his position, the availability of expert help, the element of time, pressure of other duties, and the type of problem—all these must be considered. However, the primary consideration is to provide the best help we can get. If the officer or no recommissioned officer is the only help available, he must do what he can.

Beyond mere humanitarian considerations, there are even more compelling reasons for extending help to a distressed soldier—practical and important reasons. A troubled soldier cannot carry his fair share of the work load. His efficiency is lowered and he is likely to make mistakes. Also, the effects of despondency can spread rapidly, and when enough people become affected, the outfit's morale deteriorates and its perform-

ance suffers. In short, a soldier with things on his mind can start a chain reaction which, if not arrested, may lead to disastrous effects in his unit.

Leaders must see that the debilitating effects of unsolved personal problems do not strike their units. The right kind of help, at the right time, and in the proper amount, can prevent—or at least minimize—the demoralizing effects of personal difficulties. Troop leaders can, and often do, provide this assistance. More often than not, it entails counseling the troubled soldier.

The counseling process has proved to be effective. Sometimes it is only a first step, but often it points the way to a workable solution. Unfortunately, good counseling is difficult. The successful counselor must have much more than a desire to help. He must understand the complexity of the process, appreciate the difficulties involved, and be able to apply some tested methods.

Of course, it takes years of highly specialized training and closely guided experience to become a skilled counselor. Many professionals maintain that the untrained should never attempt to counsel others, and there is ample evidence to support their contention. Undoubtedly, amateurs have been responsible for introducing complications and, at times, for inflicting severe psychological damage. However, to use that as an argument against counseling by other than the highly trained is ridiculous, for the reason that at one time or another, most persons act as counselors to their juniors, the less experienced, or the less wise. Although we don't expect our troop leaders to act as trained counselors, quite often they are called upon to counsel. Consequently, anything we can do to equip them for this difficult task seems very much worth while. Here are some relatively simple guides, based on sound psychological principles, which any mature person can apply without benefit of formal training.

▶ Be accessible. You can't help a soldier if he can't tell you he is troubled, and your help won't be effective unless it comes at the right time. The right time is now, so be available. Adopt an open-door policy.

▶ Be interested. Never belittle a soldier's trouble, no matter how trivial. To him it is vitally important, so listen attentively. This does not mean that your basic function as a counselor is to reassure or encourage, or that you merely say you're sure everything will turn out all right. If by speech, action, or even facial expression, you indicate that you doubt the problem is serious, the soldier will leave you with his trouble magnified, not lessened, by your "counseling." Let him



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know that you appreciate the weight of his burden, that you want to help him overcome it.

▶ Be patient. Effective counseling takes time, and can't be hurried. Be calm and patient, and carefully avoid any evidence of boredom, anxiety, irritation, or pressure. In addition, counseling sessions often induce emotional outbursts, even expressions of hostility. These can be hard to face, and are likely to upset the inexperienced counselor. He must maintain his composure and refrain from antagonizing or embarrassing the troubled. Above all, avoid anything that might undermine the soldier's self-respect. Remember, you are trying to help; a counseling period is no time to respect your own needs.

Listen more than you talk. For unskilled counselors, learning to listen is most difficult. Most seem to have an overwhelming desire to talk. Often they find periods of silence extremely disturbing and can't restrain themselves from interjecting a question or a comment. Resist that impulse. Let the soldier describe his trouble as he sees it. Hear him out, and try to see it as he does. When he's silent he's thinking, so let him think through what he wants to say. Often the transfer of thoughts into speech allows a person to see his cares more clearly or differently, and can be a big step toward solution. Sometimes, talking about a problem induces a kind of catharsis, a purging of emotions, that brings relief to the afflicted. So let the soldier talk; maybe that's all you'll need do.

Let the soldier decide for himself. Don't attempt to come up with "the answer." Your aim is to help him arrive at a sound decision, not to decide for him. You do this by exploring with him factors he has not considered. Don't force these on him; you can lead him on with questions beginning "Do you think . . ." "Is it possible . . ." "Could it be. . . ." You can also restate ideas and feelings he has already expressed, thus enabling him to reconsider them. You can summarize. Finally, you can help the soldier try solutions in his own mind by considering the possible consequences of each course of action. But let him decide.

Offer facts, not advice. This cardinal rule in counseling often is ignored. Most of us feel fully competent to advise, and we rather enjoy being asked to do so. It inflates our ego. However, to act as adviser is to play god. Rarely is a man so gifted that he can place himself in the position of the troubled and propose a workable solution. Yet this is precisely what the counselor must do if his advice is to be accepted and followed. Most people approach others for advice with preconceived notions of what the advice should be. When offered the advice they expect, they congratulate themselves on having been smart enough to seek "expert" help. Conversely, if what they are proffered doesn't agree with the expected solution, they convince themselves that the adviser doesn't know what he is talking about.

A word of caution here. This in no way relieves the counselor of his duty of volunteering information—facts the soldier needs to consider in overcoming his difficulty. The important thing is to distinguish between information and advice. Facts should be furnished freely, but offering advice is rarely good practice. It demands omniscience, which most of us don't have, and renders the counselor at least partly responsible for the outcome, good or bad, if his advice is followed. So avoid advice-giving.

▶ Get expert help when it is needed. Know when you're going in over your head. The Army has all sorts of specialists. When you lack the authority, the information, the experience, or the skill required to help the soldier, don't try to act on your own. Send him to a specialist or an agency qualified to supply the help he needs. Never attempt the brush-off. Make the initial contacts for him and check to see that he follows through. That is, although you yourself may not be competent to assist, you are still responsible for seeing that the soldier is helped.

In short, skill in counseling is a must for today's leader. It can be important in building and maintaining a unit's efficiency. At the very least, good counseling will lead to higher morale.

## ADVISE-IF YOU DARE. Most young soldiers want discipline but they aren't getting it Sgt. HAHN FUGLEMAN

Today's company officer or noncomissioned officer hardly dares hand out advice to younger soldiers—even when it's asked of him.

Time was when the soldier in the ranks could, and did, have most of his troubles solved by his section sergeant, his first sergeant, or as a last resort, his company commander. But that was long ago and far away. Now the do-gooders are too firmly in the saddle.

James Jones to the contrary, the professional officer and noncommissioned officer of the Old Army was not an illiterate sadist but a human being—and a pretty sharp one at that. And the second lieutenants of the thirties are the generals of the sixties—officers who had the intelligence to make the transition from horse to Hercules. Corporals of the thirties, if not commissioned, are sergeants major of missile battalions or highly skilled technicians. During the depression the

Army had no trouble in recruiting. It could be, and was, highly selective and it wasn't until the frantic expansion and the draft that the Army began to find in the ranks so many 8-balls and men of lower IQ.

These were the problem children who began to make necessary the expanded inspector general sections, Red Cross field directors on all posts, mental health setups, special services, morale and public relations officers.

They are still with us, and they have usurped much of the officer's and noncommissioned officer's prerogative of counseling and caring for their own men.

Much of the current workload of chaplains, the IG, the mental health people and the do-gooders can be directly attributed to the gradual whittling away of authority vested in the company officer and his non-commissioned officers. Knowing this, the young soldier

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seldom seeks advice from his platoon sergeant—he simply notifies him that he is going on sick call, to the IG, or whatever. And he takes off, the sergeant powerless to stop him or even to try to find out his trouble.

As for meting out minor punishment to malcontents, perish the thought! These lads are accomplished latrine lawyers even before induction. They bring along their Congressman's address and most of them know where the IG's office is before they find the shortest route to the PX.

I propose that first we make the first soldier something more than a highly paid paper-pusher who checks into the orderly room at 0800 and departs for the open mess in time to make the happy-hour at 1630. Let's get him back with the troops; let him hold reveille rather than put it off on the senior man living in barracks. How long has it been since you've seen a first-shirt stand at the chow-line to check food service, uniforms, and the conduct of his men? The job of first sergeant was never meant to be run on a 40-hour week. That diamond-in-the-middle meant that he should earn his higher pay and prestige as infallible administrator, company psychologist, father-image and Jovian meterouter of justice.

Let's close the open-door policy of the company commander and switch from the genial I'm-alwaysavailable line to the old-time remoteness which not only made him an object of respect but gave him time to go about the business of commanding a company the job for which he was trained at considerable expense. For heaven's sake let's cease this incredible jumping of all command channels that allows any soldier to approach his commander at will. (I've seen this carried to such extremes that Private Joe Blow actually called his company commander at home to come back to the company and issue him a pass because he had a heavy date in town!)

Next, let's make one sweeping change that will give the individual soldier more self-respect as a stand-upon-his-hind-legs male of the species. It's bad enough that any soldier should have a personal problem, but to have to go whining to a bachelor-girl personal affairs officer or Army Emergency Relief official is adding insult to injury!

While we're at it, couldn't we make it just a wee bit rougher on the recruit? I've seen remounts fall out for fisticuffs over who had the biggest SOB for a sergeant. They want to be proud of him because he is something of an SOB; but SOBs impart traumas, and traumas are taboo. Young men come into the Army looking for discipline, and they get kindergarten kid games at the service club. They have to admit to Dad and older brother that they had it rougher—and are secretly ashamed.

If the head-shrinkers and do-gooders will let them, our officers and noncommissioned officers will take our young men, care for and counsel them, and turn them into fighting men.

Believe it or not, that's what most of them would like to be—and God knows America needs them to be.

## NO POPULARITY CONTEST. A leader owes his men the responsibility of making them do disagreeable things which are for their own benefit

By Gen. BRUCE C. CLARKE

For two years during World War II, I served a division commander as chief of staff and later as head of one of his combat commands. His was a strong character and he was a forceful leader. The General had firm ideas about what he liked and disliked, and placed rigid requirements on his officers and men in matters of equipment and uniforms, tactical dispositions during field training, care and handling of vehicles, and the like. Many of his requirements were unpopular. Once, during an evening's discussion, I pointed out the sternness of these things, and asked if he felt the effort he exerted was not excessive compared with the practical results he achieved. His answer—I shall never forget it—gave me an insight into the problems of training and preparing troops for emergencies or battle.

The General said that during an emergency or battle, a commander must have no hesitation in demanding of his officers and men many practices that are unpopular. He must never entertain any thought of whether they make himself popular or unpopular. He pointed out that a commander who is unable to obtain prompt compliance with unpopular requirements by his officers and men during training and while preparing for combat, could not expect strict compliance with those requirements in meeting emergencies or in attacking an enemy in battle. He said that his strictness during the training period served three purposes. It conditioned his people to promptly carry out his in-

structions. The way in which they carried them out served as a constant measure of his hold on his officers and men. Finally, these practices—along with other things—helped instill a fierce pride in the division.

I might add that this officer became one of the most respected division commanders I have known. Even now—more than 15 years after he left us—he is the most popular person at our division association's conventions.

Later, when I was detailed to head a combat command of this division, I remembered the principle often used at Leavenworth of attacking at first light. One reason for doing this was the hope of catching the enemy off balance and unprepared to resist an attack. Now if we taught this, probably the enemy did too. Therefore, whenever I had my combat command in the field for training, I required every man, by first light, to be up, dressed, and at his battle station. Communications were checked all the way from squads to me, and reports of readiness were relayed from each squad to me. After daylight—and if I decided no attack was probable—the troops were permitted to eat breakfast and then were allowed to proceed with the day's activities.

My early-morning stand-to was never popular, and there were many requests to relax its demands, particularly for men who had been on guard or on night duty. I denied them all, because I felt that if we were



## Beneath a field like this...

#### is a complex communications center

In minutes, an enemy attack could level some of our sprawling cities.

Because of this, the Bell System is now supplementing its great reaches of buried cable with a network of underground communications stations.

Under the protection of a thick earth and concrete cover, and away from major target areas, several Bell System communications centers are already in operation. Many more are to come.

The walls for these installations are huge, reinforced concrete slabs. Ventilation systems filter air so fine that even radioactive fallout cannot enter. Food and water are stockpiled. Living quarters are provided for all operating personnel.

These buildings are costly. Tough

Yet, the Bell System recognizes that communications are the lifelines of our

defense systems. And so we took the lead in establishing these underground centers with our own money.

There are many other ingenious projects in our "Survivability" program for America's communications. Many cannot be mentioned here.

Because of them, ambitious command, control and defense systems are feasible. And our vast existing network is available for further tailormade defense communications.

#### BELL TELEPHONE SYSTEM



overrun while still asleep, the enemy would not spare those who had gotten to bed late.

I followed this procedure in my command throughout the war. I can say that even in the face of the enemy it was not popular. However, on several occasions it did save elements of my command from being overrun and destroyed in the early morning. On one occasion, because it was ready, a portion of a tank battalion was saved from destruction by the attack of an enemy tank brigade in the fog at first light.

On another morning, my combat command was in the rear of the enemy's lines, east of Nancy. The headquarters force was alert at first light, men were manning their defensive positions, weapons had been checked, and communications had been established. In particular, the three tank destroyers attached to my headquarters were in position—loaded and manned. At daylight, a platoon of enemy tanks barrelled into the headquarters area (which for a combat command headquarters was not very broad). The tank destroyers immediately took them under fire and knocked out three. The other two withdrew. Our loss was only one TD, destroyed by a direct hit.

In the days which followed there was much discussion at my headquarters about this attack. One man said he never realized how crowded a combat command headquarters could become after an enemy tank platoon joined it.

I heard no more around my headquarters about the requirement for everyone to be dressed, alert, and in position at daylight.

My purpose in recalling these experiences is to point out that a leader owes his men the responsibility of requiring them to do things which are for their own benefit—and for the benefit of the command as a whole—even though those requirements are unpopular.

## 'FOR REASONS I SHALL NEVER KNOW.' Ask a soldier why he is fighting and you might get a surprising answer By Major WILLIAM PLAINE JUSTE

The other day we held a symposium on Problems of Leadership on the Future Battlefield. Many views, concepts, and "envisions" were aired by those officers attending.

Actually, things got pretty involved. Some were worried about the soldier's reaction to the effects of new weapons, others advanced ideas for toughening up the troops, and the rest thought that an intensive program of "reorientation," education, and information would be necessary before combat.

The conferees became absorbed in their favorite pastime. They had become engrossed in the well-known conference game of "talking things over" or, in this instance, of "considering the possible inherent problems confronting the soldier in the environment of modern warfare." The assemblage became so happy with itself that soon the original topic was forgotten. The conferees got lost.

Finally, to get back on the track, the moderator resorted to the venerable practice of easing out of his difficulty by appointing various committees. The committee chairmen were enjoined to develop the most effective means of arriving at the best approach to the subject under consideration, and to submit reports.

The committees in turn appointed working committees and all sorts of subgroups. A vigorous program was initiated for poll-taking, position papers, test methods, and evaluation studies. Target dates and deadlines for forwarding recommendations were set.

Most agreed that it was a very successful get-together. Nothing concrete had been constructed; still, the variables of the problems had been defined and the steering committee knew what was expected of it. The next scheduled meeting would iron out most of the difficulties and the contemplated "position papers" would serve to guide those charged with fixing doctrine.

Things were going along quite well—until about a week later, when one of the ad hoc subcommittees met.

This subcommittee had been given the task of de-

termining how "soldier reaction" to various situations could be suitably evaluated. After a great deal of discussion, the subcommittee set upon one method as being the most efficient, impartial, and reliable: they decided to conduct a poll.

Well, not exactly a poll, but a series of interviews. The interview, all realized, was more personal and allowed the interviewer to judge responses, physiological reflexes, facial expressions, and tone of voice of the interviewed.

Just as the subcommittee on soldier reaction had almost reached agreement as to what firm or group would be employed to administer the interview program, an interruption occurred. A young captain rose and requested permission to speak. (The captain had been detailed to the symposium to fill the space set aside for "a troop leader with some combat experience at the unit level." His Silver Star and serious demeanor were evidence that he met this requirement.)

Because until now the young officer had been fairly taciturn, a few members of the group were somewhat surprised. Nevertheless, he did rise, and here is what he is reported to have said.

"Gentlemen, before a final vote is cast, I would like to tell you of an incident which I think may bear on our problem.

"In 1953, my platoon was resting in the Imjin Valley after a fair set-to with the Chinese. Corporal Howland and I were having a smoke and rehashing our past action.

"The corporal—one of the best, I might add—suddenly changed the subject. He asked if I thought he had acted properly during a recent experience of his.

"To make it short, it seems that just before our talk, Corporal Howland had been detailed to go to regiment to answer certain questions by a member of a traveling research team. Howland was wondering if he had responded correctly and in the manner expected.

"The first question was: 'Corporal, do you know why you are in Korea?'

**BOEING-VERTOL 107...** 

THE WORLD'S ONLY

"MISSION MODULE" HELICOPTER

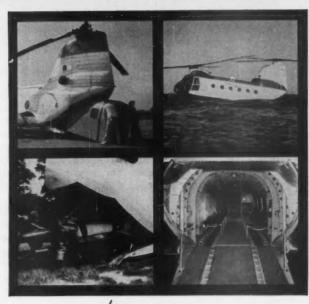


## SIGNIFICANT FACTS ABOUT THE 107's WATER CAPABILITY

In the 107 helicopter, water landing capability has been achieved without special flotation equipment or the weight or drag penalties of floats or boat hull. Thus over-water operation can be carried out in full confidence that, should it be necessary, water landings and take offs can be made safely. The helicopter's fuselage possesses good water-taxiing characteristics. Flotation is assured by a factory-sealed fuselage of unique, flexible design; and a remarkable degree of lateral stability is provided by extended stubs on either side of the fuselage that house landing-gear support structure and fuel tanks. Elevated mounting of the rear rotor permits descent and landing in a nose-up flared attitude of as much as 30 degrees with no change in fuselage attitude required before touchdown. This is important in water landings at night, in low visibility or on glassy seas.

The "mission module" versatility of the Boeing-Vertol 107 means a high potential of all-around usefulness in operations. For example, pre-packaged, "plug-in" modules for anti-submarine warfare, minesweeping and rescue missions can be installed internally in a matter of minutes between flights. In addition, the same aircraft can tow, lift or carry heavy or bulky loads externally. Cargo of more than two tons can be speedily loaded or unloaded in the fuselage via the full-width rear ramp.

Along with its water landing capability and "mission module" versatility, the 107 offers the reliability of twinturbine power. All in all, it is one of the most tactically and logistically useful aircraft available to the Armed Forces





"Answer: 'Because I was sent here, I guess.'

"Next question: 'Well, then, why are you fighting?'

"'Because my platoon is.'

"Perhaps the researcher meant to ask Howland more questions, but he didn't, and the corporal returned to his outfit. He was given no reason for the interview or for its quick termination. That's why he asked for my opinion.

"What did I say? Merely that I thought his answers

were superb.

"I don't know what use was subsequently made of Corporal Howland's replies; but if his answers ever deserved repeating, I believe now is the time.

"I hope my little illustration will benefit the committee. Thank you."

No minutes of this particular committee meeting were recorded. However, I've heard it said that the group was disbanded and the members directed to return to their home stations and resume their primary duties.

## DEFENDING THOSE WIDE GAPS. The nature of future war may show the need for sniper units Col. HENRY E. KELLY

In past wars armies have used snipers with marked effect. At times they were grouped into special units of "sharpshooters," as in our Civil War, but whatever their organization, in general the nature of their tactical role has required them to work either singly or in pairs. The basic qualification has always been the rifleman's ability to score telling first-round hits at the extreme range permitted by the combination of weapon and ammunition. Consequently, the sniper usually is armed with a weapon designed for long-range accurate fire

Apparently we no longer consider the sniper essential, for the rifle-squad sniper—really only a designated and specially armed rifleman—has been dropped. Neither is there a sniper detachment in our battle group organization.

When you consider the mobility and dispersion we visualize for the future battlefield, this seems rather illogical. Broad areas and fluid situations seem to call for disciplined, skilled marksmen who can reach out and score hits at long ranges even under difficult conditions.

One reason advanced for eliminating the sniper is that future combat will require every infantryman to be a dead shot. That's like saying every American soldier must be able to lick his weight in wildcats. Unfortunately, though, in our day it is not realistic to visualize an army of sharpshooters. Our people no longer have to munt in order to eat, and we may have only a short time for training riflemen. Also, today's rifles and ammunition must be greatly improved if they are to consistently score hits at ranges greater than 400 yards.

Our concept of future combat stresses the need for dispersion and the habitual existence of open flanks and wide gaps between units. Our doctrine relies heavily upon obstacles and barriers as means of reducing the danger of such uncovered areas. Nevertheless, to be of real value, barriers must be protected by fire delivered by relatively small forces. The vulnerability of these small forces to aggressive attack often will necessitate the resort to withdrawals so as to gain the time required for moving up reserves to the endangered area. When used for such a task, light forces must be highly mobile, perhaps even air-transported. Since they must protect wide fronts with limited means, they must have ample and dependable

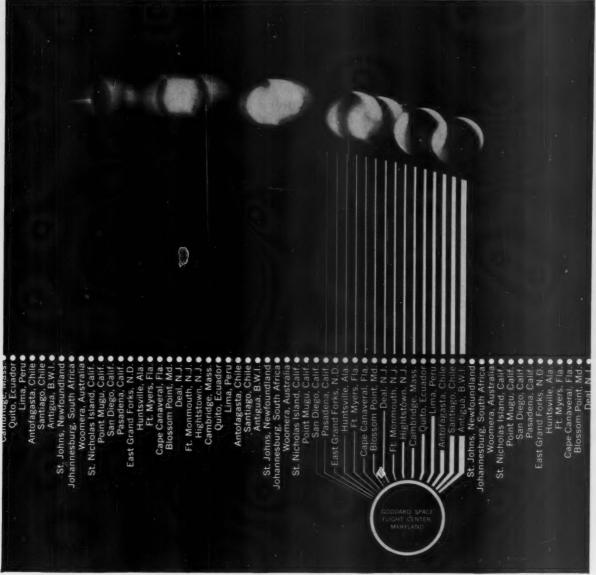
communications. Most important, such missions must not be given to hastily assembled task forces. Rather, these troops must be trained to fight together smoothly, with confidence in one another prevailing among all elements.

Reflection on the combined impact of these requirements leads to the desirability of forming small units -possibly of company size-especially designed to defend wide gaps and open flanks. Such a company would be ideal for the task, if organized into squads which combine, say, two heavy machine guns with three or four specially trained and armed snipers. Whether transported by motors or by helicopters, these sniper groups could effectively engage the attacker at the long ranges required in delaying actions. Close-up organic transportation would permit them to remain in position until the last possible moment, as well as facilitate quick occupation of the next position. Dependable communications within each squad would contribute to both deployment upon the wide front and the coordinated teamwork essential for delaying.

I think it is unrealistic to expect the current rifle unit to carry out such missions. For one thing, we cannot depend upon the combination of the issued rifle and ammunition for the consistent hits at ranges beyond 400 yards. Four hundreds yards is too shallow a range to effectively delay an aggressive attacker. To effectively delay the enemy we must score long-range hits, then pull out rapidly as he closes. The current rifle company has neither the armament nor the training for this role over the frontages we visualize.

This type of company would form a suitable building block for covering the wide-open areas which seem to be a vital element in our doctrine on future combat. Stiffened with armor and perhaps air-defense weapons, they would serve as a realistic means of protecting these gaps economically and effectively.

The nature of future war may show the need for the sniper—this time as a key member of a unit created for a special and vital task. Wide gaps and open flanks cannot be protected by good intentions alone. Forces assigned such a difficult job must be qualified by equipment and by training. The sniper, a trained infantryman who can successfully engage long-range point targets, may once again fill a vital spot in the combat team.



Flexible, world-wide network now speeds launching and tracking data, administrative messages, computations in seconds and in writing.

## NASA chooses Western Union-engineered system for world-wide satellite tracking stations and computer centers

The world over, National Aeronautics and Space Administration Minitrack Stations remain operational around the clock. Their mission: to pick up satellite tracking intelligence and transmit it instantaneously to NASA's Goddard Space Flight Center in Maryland.

Now, every NASA Minitrack Station can transmit direct to the Maryland Center—or use this point as a relay for messages between individual stations. Equally important: Maryland can send launching and tracking intelligence simultaneously to NASA installations around the globe.

"Conference Circuits" are another unique feature of this system. With push-button ease and speed, Minitrack Stations on opposite sides of the world can now "talk" to each other in writing.

Every NASA message is automatically numbered before transmission. No chance of loss or error. And monitoring equipment assures continuous maintenance of all circuits.

Where fast, modern communications are needed to speed information without delay, without error, without fail . . . new Western Union systems are meeting the challenge.

WESTERN UNION . . . finds better ways to speed it electronically

#### Private Le Cao Quang

(Continued from page 28)

spaced about 20 meters apart. Each squad erects breastworks about 18 inches high in sections three to four yards long, and these positions are ringed with panjis. During daytime one sentinel posts Quang's unit and at night guard posts are manned by two men.

Like soldiers anywhere, Quang has a rather set routine when not actually in combat away from this "safe area" defensive position. Reveille is at 0300. Food is issued twice daily, each guerrilla's share being a liter of rice, together with some nuoc mam, a fish sauce. Each squad is issued eight liters of kerosene a month. Viet Cong guerrillas begin cooking their rice immediately after reveille and eat around 0500. Political indoctrination is from 0630 to 1130. More rice at noon, followed by the traditional siesta. Weapons training and tactical instruction are conducted in the afternoon.

After dinner, around 1900 hours, there is a critique of the day's combat operations or other activities. After this the troops are expected to listen to Radio Hanoi. Then the men are permitted to sleep.

Quang has never heard of Davy Crockett or nerve gas. He is ignorant of the fact that Pershing, Lacrosse or Little John could all be quickly arrayed against him. (They would have a hell of a time finding him.) When jets shriek over his swamp area once or twice a week, Quang looks up in unabashed wonder.

Since the cold war began our green herring-bone-twill Army has only once actively participated in combat. Little "unsoldierly" guerrillas like Quang have patiently padded along their trails, fighting hard and almost constantly since 1946 in the swamps of the Mekong. Quang, his methods of fighting, and the ideology which impels him are formidable adversaries. Right now he and his comrades are in the process of attempting to take over two more countries of Asia. Our black combat boots are spit-shined, our fatigues starched and pressed, our spring-up field caps well blocked. But we must never disdain Private Quang. He could very well be the Soldier of the Future.

#### Building the Bundeswehr

(Continued from page 36)

tank weighing 36 tons (the M60 weighs 49 tons) whose silhouette is a meter lower than the M60's. It mounts a British 105mm gun and is believed to have as broad an operational radius as the new Soviet tank. The protoypes have now been ex-

changed, comparative trials are being run and the final choice—probably a combination of the two models—will go into production in 1962.

Another difference is seen in armor-infantry tactics. The Germans believe that the U.S. Army's concept, which lets armored infantry dismount to fight a tank's battle, makes for a slower advance in the offense with higher losses. The German Army wants to fight its infantry as an integral part of its armor, the infantry soldier dismounting from his armored personnel carrier to fight only when the tanks cannot advance. With the bulk of the infantry mounted in APCs, hatches closed against atomic radiation, it sees the infantry commander, as was often the case in Russia, riding next to the armor commander. In other words, a single armor-infantry punch with armor protecting infantry in the attack, infantry protecting armor in the defense.

#### **Command concepts**

As for the command function, the Bundeswehr embraces the Elder Moltke's tradition of offering a commander a general plan, giving him his objective, boundaries and supporting strength, then leaving the job up to him. The American concept, in which the commander is given more detailed orders including intermediate phase lines, is felt to be too conservative though admittedly much safer. The great advantage of the Moltke concept, the Germans argue, is immediate exploitation of a favorable situation by the local commander; the danger is that it can cause adventuresome and harmful conduct by the same commander, as witness Kluck's free-wheeling conduct in the 1914 invasion of France.

As in other such areas of disagreement, German officials frankly confess that the correct answer undoubtedly lies somewhere between these two beliefs, an attitude similar to our own as evidenced by the increasingly popular belief that the company, for example, should be given back to the company commander. In other fields, too, the differences are in degree, but are interesting because from the German side they are voiced with the enthusiasm of the builder linking new techniques to standard doctrines. Thus, the German Army wants organic close air support, not by superjet aircraft, but by a plane that not only can accomplish front-line fire missions but fly reconnaissance missions as well. It is looking with increasing interest at the new Italian Fiat G-91, as is the U.S. Army. Similarly, it sees the need for a VTOL transport aircraft and is bringing out in 1962 its own protoype, the Transall, even while concurrently testing the British Hawker P-1127.

THE desire of the Bundeswehr to pool its own strength and abilities with Western countries in an attempt to gain the best possible integrated



## NORAD ON THE ALERT

#### Inputs from BMEWS Provide Instantaneous Missile Data Direct to NORAD Headquarters

From our vast outer defense perimeter, over thousands of miles, to the nerve center of the North American Air Defense Command at Colorado Springs, the most advanced concept of data handling and checkout is being utilized in the BMEWS system. The stakes are high, for the purpose is defense of the North American Continent.

At BMEWS installations operated by USAF Air Defense Command, computers read out missile tracking data from giant radars. This information is simultaneously relayed to NORAD's Combat Operations Center.

The Radio Corporation of America is prime systems contractor for BMEWS. At the COC, RCA's Display Information Processor computing equipment automatically evaluates missile sightings, launch sites and target areas. By means of data processing and projection equipment installed by RCA and a team of other electronics manufacturers, the findings are displayed on huge, two-story high

map-screens in coded color symbols, providing the NORAD battle staff with an electronic panorama of the North American and Eurasian land masses.

The handling of BMEWS inputs at NORAD is an example of how RCA data processing capabilities are assuring the high degree of reliability so vital to continental defense.

Out of the defense needs of today a new generation of RCA electronic data processing equipments has been born. For tomorrow's needs RCA offers one of the nation's foremost capabilities in research, design, development and production of data processing equipment for space and missile projects. For information on these and other new RCA scientific developments, write Dept. 434, Defense Electronic Products, Radio Corporation of America, Camden, N. J.



The Most Trusted Name in Electronics

NATO force is, to my mind, a major contribution in itself. Standing more steadily on its feet with each year's growth, there is little doubt that the new Army will exert an influence that should prove healthy to the West. As one German officer put it, "The full defensive power of NATO cannot tactically be realized until today's doctrinal and technical divergences are overcome, are standardized throughout NATO forces."

#### McNamara's Band

(Continued from page 43)

for the battlefield in two months would not die on the vine. Would the cost effectiveness studies and the electronic computers turn thumbs down?

#### Aims of the program

And this was not the only defense program for which the future was clouded. What about reorganization of the Defense Department? What about roles and missions? And the merger of STRAC and the Tactical Air Command? More sealift and airlift? Aircraft carriers?

And what was the future of Polaris submarines after No. 29? The mobile Minuteman? Dynasoar? B-70 and other manned bombers?

From McNamara's testimony before Congress, the implication grew that the pattern and shape of the defense program until 1965 had been decided—tentatively, with open ends for adjustments.

Unless intelligence brought news of substantial changes in opposing strength, unless technology raised the hope or fear of an antimissile defense or some jolting new weapon, the McNamara program appeared to be set until 1965, if Khrushchev did not upset calculations.

The fiscal 1963 Defense budget might disclose more clearly the future trends—if the public has the need to know it. More changes were inevitable. More bases closed. More obsolete weapons discarded.

But what looked like a stable defense budget aimed at 1965, with some confidence that it provided the strategic deterrent forces to keep the Kremlin and Peking at peace, could be crumpled into the waste basket this hot summer before the very cold winter President Kennedy forecast after talking to Khrushchev at Vienna.

Limited mobilization, call-up of two or more National Guard divisions or any stern emergency measures taken this summer could make a shambles of McNamara's carefully calculated "optimum" choices and cost-benefit ratio studies.

As for McNamara's long-range strategy studies and rewriting of basic policies, these too might have to be shelved if onrushing events make the short-term contingency war plans of overriding immediacy. The esoteric debate goes on in some Pentagon quarters as to whether the McNamara program means "finite" deterrence has won over "counterforce"—or vice versa—and whether the "no city destruction" philosophy of "flexible," controlled response is the underlying premise of the new strategic planning.

McNamara and others have shied away from suggestions that basic changes are being wrought in U.S. military posture and strategy. He has chalked these general and vague goals of the new strategy: (1) appropriate strategic delivery power; (2) survivability of that power; (3) appropriate command and control of that power, related to our strategic aims; (4) strengthening our capacity to use nuclear-free arms, thereby raising the extent to which we would be required to use nuclear weapons; (5) but without changing our policy to use nuclear weapons if necessary.

Unfortunately, from the much-scissored testimony before Congress and the guarded statements of Pentagon officials, it is not clear what fundamental changes in national strategy and national policy are in the making.

Perhaps these life-or-death decisions cannot be shared openly with the general public whose survival is at stake. The people may not have the need to know.

But what of the new decisions on strategy, on the employment and control of nuclear weapons, on the choice of nuclear targets, on the total strategic power needed to deter, on the forces needed for limited wars and what commitments we can make to our allies?

What if these far-reaching and basic decisions are determined by theorists who have "consulted" the military experts, but did not *listen* to them?

The only comforting answer to the worriers is that McNamara and his boss in the White House are hard-headed pragmatists, and the military have a way of being heard.















#### weather bird

Rain (...) hail (A) thunder (R) lightning ( ) ice pellets, sleet (\*) high drifting snow (+) are merely symbols on a weather map—not expected to be problems to the U.S. Army's SERGEANT missile system.

SERGEANT missile system's objectives are to be ready for action in the meanest weather, the most extreme temperatures and environments, at high and low altitudes. It can be checked out by one man with minimum training, emplaced and fired in a very short time by a six-man crew,

The land, sea and air-transportable SERGEANT system, produced for the Army by Sperry Utah—when it becomes operational—will take its place among the tough and dependable sergeants of U.S. Army tradition.

VISIT OUR BOOTHS 47-52 AT THE 1961 MEETING OF THE ASSOCIATION OF THE U.S. ARMY.



## Soviet Army Air Mobility

New Soviet Army support aircraft and a new technique for mass-jumping airborne troops were prominent features at this year's large military air show in Moscow.

More than 60 parachutists, using a reefing mechanism around the skirt of their main chute to delay its opening, jumped together from three Antonov An-10A turboprop transports. Using this technique the main chutes were pulled from the backpack in normal fashion by a static line attached to the aircraft. They were not allowed to fill with air, however, until the chutists neared the ground. A pilot chute, relatively large by U.S. troop standards, kept the reefed main chute extended safely above the jumper during his fall.

Several improvements in airborne tactics seem possible using reefed chutes. Aircraft should be able to drop troops at much higher speeds without danger to the jumpers. Mass jumps from greater altitudes seem feasible. The falling speed of the individual soldier is greatly increased when his chute is reefed so that wind dispersion and vulnerability to ground fire should become relatively minor factors. As far as jumping

Soviet version of Lockheed 130 Hercules transport is the An-10A in both military and civilian use

**Aviation Week** 



comfort is concerned, the opening shock undoubtedly will be lessened and the man will be stabilized in the best position to receive it.

#### Convertiplane and flying crane

A large convertiplane, code named the Hoop, with two gas turbine engines estimated at 4,000 eshp each was one of the aircraft shown for the first time at the Moscow show. During vertical flight, the engines drive two large rotors and for forward cruising they are geared into conventional propellers.

A flying crane version of the Mi-6, world's largest helicopter, was also shown for the first time. This

Parachuters jump from An-10A aircraft.



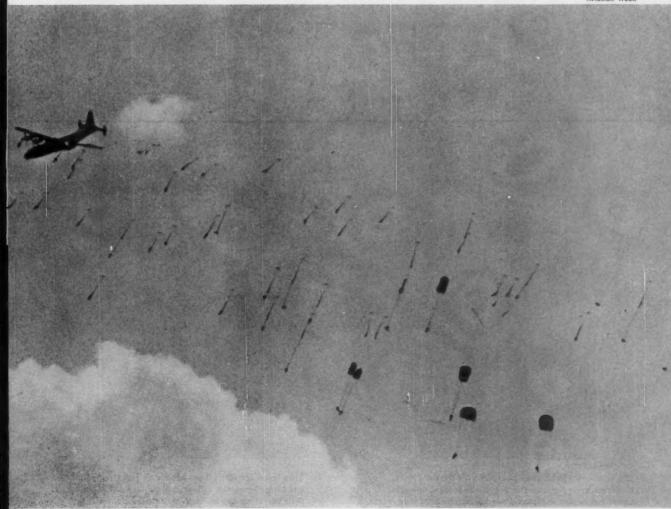


Sovfoto

Derived from Soviet Mi-6 giant helicopter, this flying crane lifts freight-car sized house, with estimated weight of 40,000 lbs.

Reefing mechanism around skirt of main chute delays opening, may permit safe dropping with less shock and at much higher speeds

Aviation Week



crane demonstrated that it can handle a load with a volume about equal to that of a U.S. railway freight car. Maximum weight of the load is estimated at about 40,000 pounds.

A new, relatively light helicopter apparently powered with two turbine engines was seen in flight during the air show. It was armed with two large missiles that were slung externally and apparently could be air-launched in flying cavalry style. This was a co-axial rotor helicopter and its design is attributed to Nikolai Kamov, the Soviet designer specializing in this type.

The three An-10A transports in the picture at bottom left of page 86 are the Russian counterpart of the Lockheed C-130 Hercules. This type has been flying for several years and is believed to be in wide military service.

#### Jet-powered seaplane

The Moscow show, apparently aimed at influencing the outcome of the Berlin crisis, also revealed some interesting aircraft to the U.S. Navy and Air Force. A jet seaplane, reminiscent of the cancelled Martin P6M SeaMaster, flew over. Two new, long-range, supersonic bombers, a large, long-range, Mach 2 interceptor; several delta-wing interceptors of about Mach 2 speed; and, a rocket boosted turbojet powered fighter were also exhibited.-J. S. Butz, Jr.



Top helicopter is turbine-powered with coaxial rotors. It carries nose radome and two air-to-ground missiles. Lower helicopter is piston-powered Kamov K-18 Hog

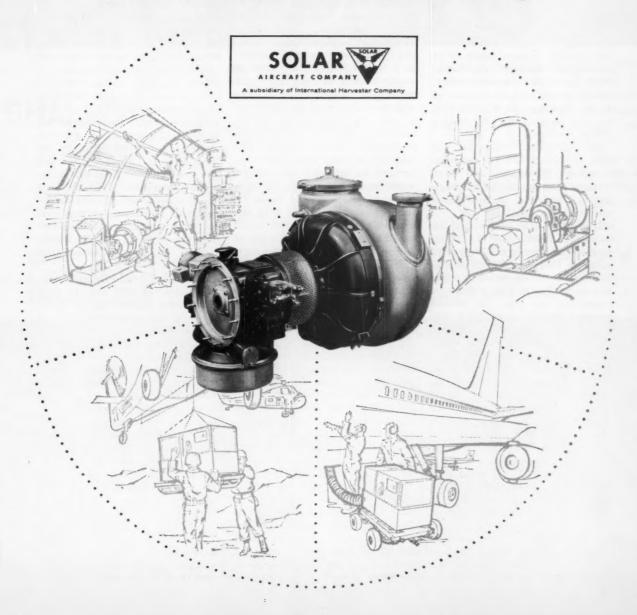


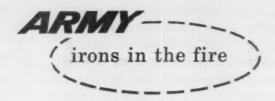
**Aviation Week** 

This large convertiplane, known as the Hoop, has two gas turbine engines with an estimated 4,000 eshp each. Only one rotor can be seen in this view of aircraft.

The Solar T-350 gas turbine is now in production. It is a rugged, reliable engine ideally suited for aircraft starting and multipurpose auxiliary power applications./ The T-350 can be used for electrical power generation and as a power source for air conditioning, de-icing and hydraulic systems./ The T-350 weighs 195 lbs. In varying configurations, it produces nominal ratings of 350 hp or 235 kw or 130 ppm of air at 54 psia. It is available in a combination of air bleed and shaft power./ Like all Solar gas turbines, it starts instantly, has minimum vibration and is easily maintained. Fuel consumption is low. Write to Dept. J-139, Solar Aircraft Company, San Diego 12, Calif.

# Versatile new Solar T-350 gas turbine does more jobs more efficiently





## TACTICAL AIRCRAFT: Two for One

Search for all-purpose close support plane abandoned in favor of long-range interdiction craft and shorter-range ground support plane

By J. S. Butz, Jr.

The long-term, many-sided debate over tactical aviation seems to be drawing to a temporary conclusion. While one or two obstacles remain, enough agreement has been reached in the Pentagon to indicate that two new tactical aircraft probably will be developed.

One of these, designated the TFX, is basically an Air Force development. Its mission will be to perform the air superiority, interdiction, and air reconnaissance roles over the battlefield. The TFX will be operated by the Tactical Air Command. It will meet TAC's requirement for extremely long ferry range so that the aircraft can be deployed from U.S. bases to either Europe or the Far East without refueling of any type. Its take-off distance will be under 3,000 feet.

The second aircraft, designated the VAX, probably will be developed under Navy cognizance. It will be much smaller than the longrange TFX and its purpose will be to provide close air support for ground combat forces. The VAX will meet the Army requirement for short, rough field operation near the front line. The Navy's prime requirement is for the aircraft to fit on the elevators of virtually all its carriers. Under present plans, the VAX will be an enlarged and improved version of the Douglas A4D attack airplane.

Operationally, the door probably is open for the Army to operate its complement of VAX aircraft. In any event there seems to be no major opposition to placing them under the direct control of the ground commander, no matter which service flies them.

Technically, the most unusual design feature being discussed for both the TFX and the VAX is the variable sweep wing. This development, pioneered by the National Aeronautics and Space Administration, is intended to give aircraft good performance and handling characteristics at both high and low speeds. To accomplish this, the wing is pivoted near the wing root so that its sweep angle can be changed in flight by an automatic mechanism. During landing and take-off, the wing would be swept forward so that its sweep angle would be almost zero and its flight characteristics would resemble those of current straight wing aircraft. At high speeds the wings would be swept back to an angle of 70 degrees or more. This high degree of wing sweep, much greater than that used today on any operational airplane, will provide several advantages at high speed. These are discussed in detail later in the article.

The VAX and TFX aircraft evolved directly from an attempt to build an all-purpose plane which could perform all of the tactical aircraft missions required by the Army, Navy, Air Force and Marine Corps, except the transport mission. More than three months were spent early this year in an intensive effort to reach a compromise between the needs of the three services. Apparently each organization ended up with one requirement that they weren't willing to compromise. The Air Force insisted on long ferry range which automatically brings the gross weight of the aircraft up to the neighborhood of 50,000 pounds. The Navy objected

because this airplane would be too big to fit on the elevators of any but its largest carriers. The Army's main objection, in which it was supported by the Navy, was the heavy expense of the large airplane which would prevent its purchase in sufficient numbers to meet the close support requirements of troop units.

Technical experts from the services, DOD and the aircraft industry generally believe that the hope for an all-purpose airplane is unrealistic. However, most of them support the dual development of the TFX and the VAX.

One clear DOD policy has developed out of these studies and discussions. At the most only two new ground support aircraft will be built. Each of them will be approved by and used by all three services if necessary. This so-called tri-service policy is also being employed in the joint development of a VTOL transport. It has been outlined in detail by Deputy Secretary of Defense Roswell L. Gilpatric. Its purpose is to save money by cutting down on the number of separate aircraft designs developed by the three services. This idea is not new and is a hold-over from the Eisenhower Administration. Even though the all-purpose aircraft was not acceptable, significant savings will accrue if the three services operate only two types of attack aircraft. Several types are in operation

While the double barrelled plan to develop the TFX and the VAX has strong support in the DOD, there is still a possibility that it will be changed in the near future. The NATO nations of Europe are considering the joint development of a ground attack fighter which will have roughly the same mission as the VAX. A number of pressures exist in the U.S. defense establishment to combine the VAX with this NATO fighter. Many advantages can be attributed to this idea, such as increased consolidation of the NATO nations, reduction of the spare parts problem for the NATO air forces in Europe, and lowered purchase price for the aircraft through increased production runs to meet U.S. as well as European

Along with its advantages, this plan would be certain to raise a



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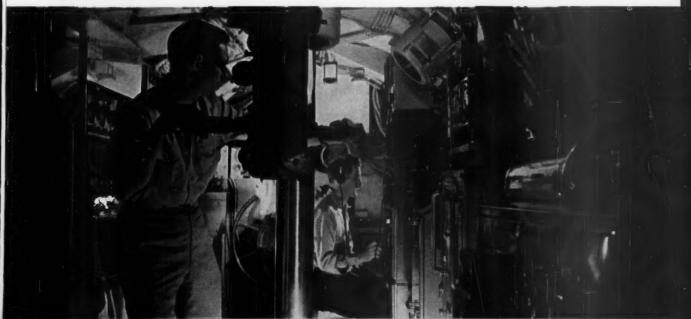
systems developed by Raytheon are used for underseas detection and ranging. With these super-sensitive "ears," U.S. nuclear submarines can locate and track intruding subs or surface vessels, or safely cruise uncharted passages beneath the sea.

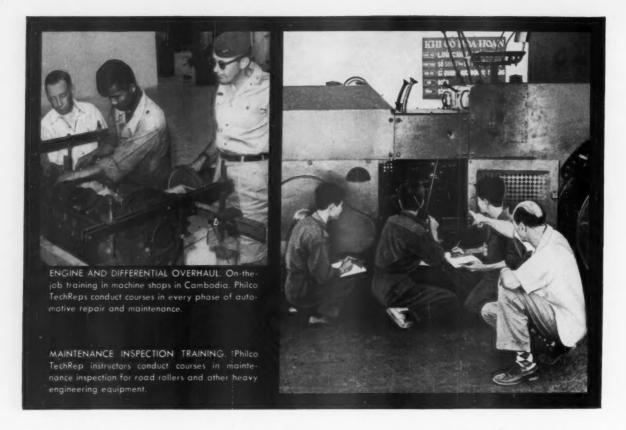
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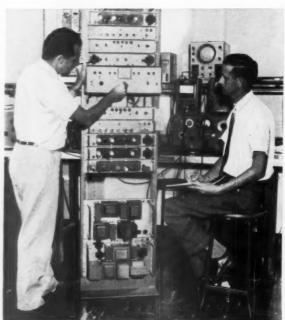
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#### IRONS IN THE FIRE

few difficulties. More voices would have to be heard from in the design of an all-NATO airplane. More compromises would have to be made. There is little doubt that the argument over vertical take-off and landing (VTOL) aircraft would be renewed. The German Luftwaffe apparently is unmovable in its conviction that the new NATO airplane should be VTOL so that it could be dispersed widely around Western Europe. Dispersal would do away with the current need for long concrete runways and prepared airfields. The Germans believe that airfields will be the first targets during any Soviet attack on Western Europe and that all of them will be destroyed during the early hours of such an attack. Therefore, the primary objective of the Luftwaffe is to eliminate its requirement for airfields. This means that every attempt will be made to buy VTOL aircraft in replacing the F-104 and other tactical aircraft now in service.

Of course, the advantages of VTOL aircraft are well known to all nations. However, all aviation specialists do not agree with the Germans that effective VTOL aircraft can be built with today's technology. Many specialists believe that operational VTOL aircraft must wait until lighter, more powerful jet engines are available. They estimate that the proper lightweight engines won't be ready for operational use until about 1970; therefore, the development of an aircraft to use them shouldn't start until 1965 or so.

This has been the judgment of the U.S. Defense Department for more than 18 months. In January of 1960, the Air Force dropped a several-year-old plan to develop a Mach 2 VTOL fighter for TAC. Tactical Air Command Headquarters became convinced that the aircraft would not meet its range and loadcarrying specifications. In addition the estimated cost of operating large numbers of dispersed aircraft is very high, and the VTOL transport needed to supply the dispersed landing and take-off pads would require almost as much development money as the attack aircraft. This money was not available at the

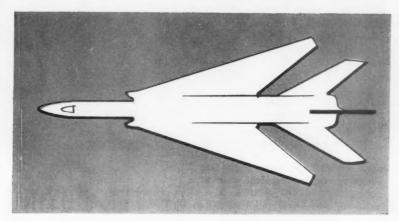
time. After dropping the VTOL fighter, TAC began investigating short take-off and landing (STOL) aircraft with variable sweep wings. This work led to the TFX requirement.

In March 1960, acting after technical consultation with the DOD and the other services, the Army rejected a VTOL design for its new close observation aircraft in favor of an improved helicopter. At present all military VTOL effort is concentrated in the development of the tri-service VTOL transport.

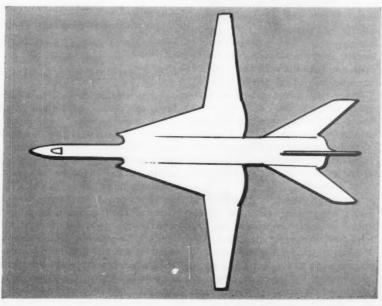
There is widespread technical opinion in NATO that the DOD position is too conservative. Consequently, there is a good chance that the new NATO fighter will

have vertical take-off and landing capability. It probably will be powered with one of two advanced English engines now under development. One is the Bristol Siddeley BS 53 now flying in the Hawker P.1127 VTOL strike fighter and the other is a new Rolls Royce lift engine. German, British, French, Italian and Dutch firms are engaged in the preliminary design of high speed VTOL aircraft. The U.S. aircraft industry also is active in this field.

Regardless of which side wins the VTOL argument or what type of consolidated management is used in its development, it seems probable that the next generation of ground support aircraft will have



Variable sweep attack aircraft. Wings unswept below and swept above.



variable sweep wings. These wings can improve the performance of all high speed aircraft, VTOL as well as STOL.

It has only been in the last year or so that U. S. aircraft manufacturers looked with favor on the variable sweep wing. This device had a disappointing development history in the early and middle 1950's. Two experimental aircrafts, the X-5 and the XF10F, which tried variable sweep wings, did not live up to predicted performance. They both had stability and control problems and suffered from excessive weight.

In spite of these problems, a research group at the Langley Research Center of the NASA continued to experiment with variable sweep. In 1959 they began to report solutions to the old problems. Industry, using this research as a starting point, has gone ahead with studies of many types of variable sweep wing aircraft, including transports and bombers as well as attack aircraft. Apparently most manufacturers see a bright future for this wing design.

Variable sweep wings improve the performance of high performance aircraft by allowing their wings to assume the ideal position during each flight condition. Four basic performance improvements can be attributed to these wings. These improvements are:

(1) Take-off and landing. Short take-off and landing depends primarily on wing span. When the wings are brought forward to zero sweep, they have their maximum span and they lift with nearly twice the efficiency of the swept wings or thin straight wings on current high speed aircraft. On VTOL airplanes the wings would not aid landing and take-off to any degree. The outstretched wings would improve performance in the critical transition from vertical to horizontal flight after take-off.

(2) High Speed: The ability to use a wing sweep angle of 75 degrees or more improves the top speed of transsonic airplanes. The F-86 Sabrejet, for instance, with 35 degree wing sweep has a top speed of about .9 the speed of sound or Mach 0.9. It would take at least

twice the available engine power to push the airplane up over the speed of sound in level flight. If the wings could be swept back to 80 degrees or so, the top speed would go up to Mach 1.1 or better with only a slight increase in engine power.

(3) Gust Loading. Rough, turbulent air is one of the most critical design considerations for all aircraft that fly at high speed and low altitudes. Turbulence can not only damage the aircraft but it can bounce a pilot so badly that his ability to control the airplane is impaired. Variable sweep wings can greatly reduce the effect of turbulent air. Turbulence can be compared to waves in the ocean. When an airplane strikes these "waves". its angle of attack to the air changes abruptly. This causes a very brief change in wing lift which results in a sudden bounce for the airplane. Straight wings are more efficient than swept wings and they develop more lift per degree change in angle of attack. Therefore, straight wing airplanes are bumped very hard by turbulent air and

those with highly swept wings ride through turbulence with relative ease.

(4) Loiter and Ferry Performance. The best performance, during loiter, is achieved by straight wing airplanes that have a long span. Variable sweep wings can provide this type of wing during loiter. At high subsonic speeds, the most economical cruise speed for aircraft powered by turbojet engines, the ideal wing sweep probably will be in the neighborhood of 30 degrees, depending upon the engine under consideration. The variable sweep wing can provide this wing position.

Current DOD plans call for the TFX design competition to begin in the Fall. This competition will be the acid test for the variable sweep wing, to see if its advantages are not outweighed by its mechanical complexity. The current enthusiasm over the design, however, makes it almost certain that the next generation of attack aircraft will have outstanding performance and operational flexibility, by virtue of wings that move in flight.

## BETTER BUYING BY THE ARMY

An important electronics manufacturer proposes a new approach to defense procurement

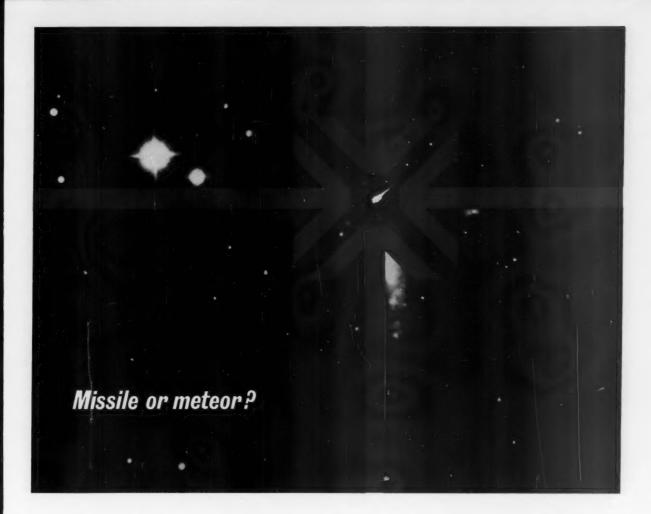
By W. A. MacDonald

In its worldwide role as a vital force for peace, the United States Army must achieve its objectives quickly, effectively and economically. However, the increasingly high cost of defense equipment and systems has become a serious handicap in attaining its goals. The problem was well summarized by General Trudeau when he said: "I challenge you, our industrial leaders, to provide the defense we need on a sound but more economical basis. Present costs are excessive and everyone knows it. We are literally pricing ourselves out of

having the capability to defend ourselves adequately."

In seeking reasons for the problem, eminent military authorities and many members of Congress have expressed beliefs such as these:

- industry is making exorbitant profits;
- industrial management is not doing a good job of design, development, manufacture, or procurement;
- the percentage of procurement by competitive bid should be greatly increased;
- so-called small business should receive a much larger share of the contract dollar;
- the Government should establish a central procurement agency.
- I agree that there is something



#### GM's DSD tracks down the answer!

In the unique Flight Physics Laboratory of General Motors Defense Systems Division, studies are now in progress on hyper-velocity projectiles. Projectiles travel as fast as 31,000 feet per second through DSD's light gas gun. It is expected that speeds up to 40,000 feet per second will soon be attained. These studies provide clues to new missile detection methods and instruments which will identify the distinctive signatures of missiles and meteors. They will prove in seconds which they are and where they come from.

Scientific areas now under study: Aero-Space • Sea Operations • Land Operations • Biological Systems • Technical Specialties

DSD calls upon the skills, knowledge and resources of these defense-oriented divisions of General Motors—AC Spark Plug • Allison • Cadillac Motor Car • Central Foundry • Cleveland Diesel Engine • Delco Appliance • Delco Moraine • Delco Products • Delco Radio • Delco-Remy • Detroit Diesel Engine • Diesel Equipment • Electro-Motive • Engineering Staff • Euclid • Frigidaire • Guide Lamp • Harrison Radiator • Hyatt Bearings • Inland Manufacturing • Manufacturing Staff • New Departure • Packard Electric • Research Laboratories • Rochester Products • Saginaw Steering Gear • Styling Staff • Truck & Coach



Two Light Gas Guns permit flight of hyper-velocity projectiles . . . including studies of high-speed impact, properties of ionized gases, new methods of detection and identification. If you can use facilities like these, contact DSD.



very wrong. But in my opinion, serious support of these five propositions will *not* remedy the situation; rather it is likely to make it much worse.

#### The problem in perspective

Before outlining some positive steps to solve it, the problem must be put in perspective. Today our contracting officer's staff is confronted with an immensely difficult task. Difficult because it is composed of two mutually conflicting parts over which these dedicated men have only partial control.

When the Government procures any complex equipment, it is interested in (1) the hardware itself, and (2) the function it performs. Unfortunately, the funds to procure hardware come from one pocket, and the funds to maintain it come from another. The contracting officer's present task is to procure systems hardware of a quality that will meet the instantaneous specification at the lowest possible price. The matter of the cost of maintaining that hardware over its useful life does not fall within his responsibility. There is a well-defined relationship between initial hardware cost and functional capability as emphasized in maintenance costs. But I feel we are now far out of balance in this relationship.

In examining an important phase

of defense procurement, I discovered that the fiscal year 1959 budget for all expenditures for electronics was \$5.935 billion. This is spread over three broad areas comprising (in billions of dollars):

Production procurement \$4.175 Operations and maintenance .890 R&D test and evaluation .870

TOTAL \$5.935

To be meaningful, the major item, "Production Procurement" (\$4.175 billion), must be further examined.

The general procurement pattern for new equipment that has been followed for some time and which is certainly true from Hazeltine's experience is:

Product development and prototype costs 10 per cent

Support equipment costs 30 per cent

Spare parts costs 30 per cent

TOTAL 70 per cent

This means that only 30 per cent of our production procurement fund of \$4.175 billion, or \$1.25 billion, goes into new weapons hardware. The remainder of our production procurement fund of \$2.92 billion, plus \$.890 billion for

operation and maintenance and, probably, half of the \$.870 billion or \$.435 billion allocated to test and evaluation, gives a grand total of \$4.245 billion and is required to satisfy the four passive functions of: product development and prototype test; operations and maintenance; support equipment; and spares.

If we assume that the useful life of our electronic equipment is five to five and one-half years without modernization, and the build-up in the weapons system in previous years was of the same general order of magnitude as in 1959, then our electronic weapons system inventory costs \$4.245 billion or 60 per cent of its initial cost each year it is in operation.

Now, to give us some reference point as to what all these figures mean, we will illustrate with two examples. Recognizing that the cases are not precisely the same, let us nevertheless first consider home radio and television receivers and their maintenance costs. Although the figures vary materially from company to company, evidence indicates that yearly maintenance costs are reasonably uniform over the life of the apparatus, and they vary from a minimum of five per cent per year to a maximum of 10 per cent to 15 per cent.

In the automotive industry, conditions are slightly different. Some companies guarantee their product for the first 12 to 18 months, and even more, at a minimum maintenance cost of about three per cent which over the life of the machine may gradually rise to 10 per cent.

With ratios varying from six to 20 times greater for the maintenance of military electronic equipment, we must conclude that there is something badly out of balance in the relationship between the initial or instantaneous costs and the useful life costs of the military electronics equipment and systems now being procured.

#### Better contractor evaluation essential

Now let us turn to the problem of selecting a contractor for a given product. Industry is confronted with about the same problem in selecting qualified suppliers as the

#### Diesels to Kwajalein

Alco Products has shipped seven diesel-electric generating units to Kwajalein to provide "precise power" for the Advanced Research Projects Agency's ballistic missile defense research facility.

The generators will maintain steady-state voltage to within one-half of one per cent and steady-state frequency to within one-quarter of one per cent. This precise power from the prime source will enable the facility to realize the best capability of its complicated electronic components, and eliminate the need for complicated power regulation devices.

The units will supply 10,500 kilowatts for Project Press (Pacific Range Electromagnetic Signature Study), on Roi-Namur Island, in

Kwajalein Atoll. Now under construction, the facility is part of ARPA's ballistic missile defense research program and will be used with other installations to test missile phenomena and discrimination techniques by observing missiles launched on the Pacific Missile Range.



Man at left shows size of one of seven huge Alco Model 251 diesel power generators scheduled for shipment to Kwajalein Island.

# NEW NAVY... **NEW WEAPONS**

New naval defense concepts are vital in these days of nuclear submarines and guided missiles. One of these: A destroyer-class hydrofoil boat guided to lurking enemy submarines by remote sonobuoys. Ford Instrument is now working to turn this new concept into operational hardware . . . one of the most recent efforts in our 46 years of service to all branches of the armed forces.



#### FORD INSTRUMENT CO.

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Ford Instrument guidance and control components participated in these missile and space "firsts": First Free-World man-into-space vehicle (MERCURY-REDSTONE) • First operational ballistic missile (REDSTONE) • First successful launching of a Free-World satellite • First successfully recovered nose cone • First successful Free-World space probe.

Government is in selecting endproducers. Since 50 to 60 per cent of the contract dollar goes into raw materials, parts, sub-assemblies and services and sub-contracts, the purchasing department is a company's largest single dollar operation. Some years ago it became increasingly apparent to Hazeltine's management that, in the selection of suppliers, the simple rule-of-thumb procedure of low bidder was completely inadequate. Accordingly, we developed a philosophy which integrates a supplier's past, present, and potential capabilities with his bid price. We believe the system, although not infallible, is an immensely valuable tool to the buyer in selecting suppliers.

As a prime contractor to the Government, Hazeltine faces two major factors: the complex equipments we produce include thousands of parts; and the absence of any one of these parts will prevent

the completion of equipments, thus increasing costs and stopping delivery to our customers.

The purpose of the system is to arrive at the true cost to us of a supplier's performance of any order. This permits an accurate evaluation of the risk involved in placing any future procurement with that company.

#### A practical approach

Competitive bidding in which price is only one of the evaluating factors tends to promote the generation of new ideas, techniques, and processes, and is of the greatest value in advancing the state of the art.

Of major importance in the evaluation is the actual record of quality and delivery on completed orders. A quality percentage is obtained for each of the last five completed orders, and these are then averaged to arrive at a single quality index. The same orders are

similarly rated with repect to ontime or late delivery, giving weight in the latter case to lateness of deliveries. The poorest delivery on each order is used to obtain an average of these ratings as a single delivery index. So we can see that the Quality Index and the Delivery Index enter into the evaluation process in connection with the supplier's bid.

The potential performance of a supplier obviously depends on possession of adequate financial resources and of adequate physical production equipment. In addition, it depends somewhat on the length of time that the supplier has served us, during which mutual knowledge of operating practices has been obtained. Numerical values are assigned, according to the data on hand, to each of these three factors. Then these numerical values enter into the evaluation process.

The various items of data are punched on IBM cards, so that the evaluation computations for the bids on a particular procurement can be made in a matter of minutes on an office type of IBM computer.

A computation of the three principal factors of quality, delivery, and potential performance produce a final single figure of merit in per cent. This figure is divided into the quoted bid price. The result is an effective price which indicates what it will cost to do business with that particular supplier.

We know this is an empirical method of evaluation, but it is uniform for all suppliers, it is based on fact, and in dozens of check cases sampled, it hits our true cost almost on the nose.

#### Changing technology and conditions

We must realize that to obtain superior equipment or systems, the three basic ingredients comprising materials, design engineering, and manufacturing practices must also be superior. I believe we also should recognize that there is no such thing as a perfect product. In a rapidly changing technology where many theories and techniques are practiced for the first time, despite the time and care taken in initial development, many soft spots will

#### **Compact Transceiver Readied**

General Electric has announced a new personal portable two-way radio described as the smallest, lightest, most compact VHF-FM man-carried communications unit to be marketed to date, with transmitter and receiver in a single case.

GE says the new communications units will be manufactured for high band military frequencies (132-174 megs) with one-watt transmitter radio frequency output. According



Dick Tracy's wrist radio comes closer with GE two-way communicator weighing only slightly more than four pounds. "Voice Commander" will be manufactured for military frequencies.

to GE, this is the highest power output in the industry for a smallcase unit.

Called "Voice Commander," the new equipment is 9.5 inches high, 5.3 inches wide, 1.7 inches deep. It weighs slightly more than four pounds.

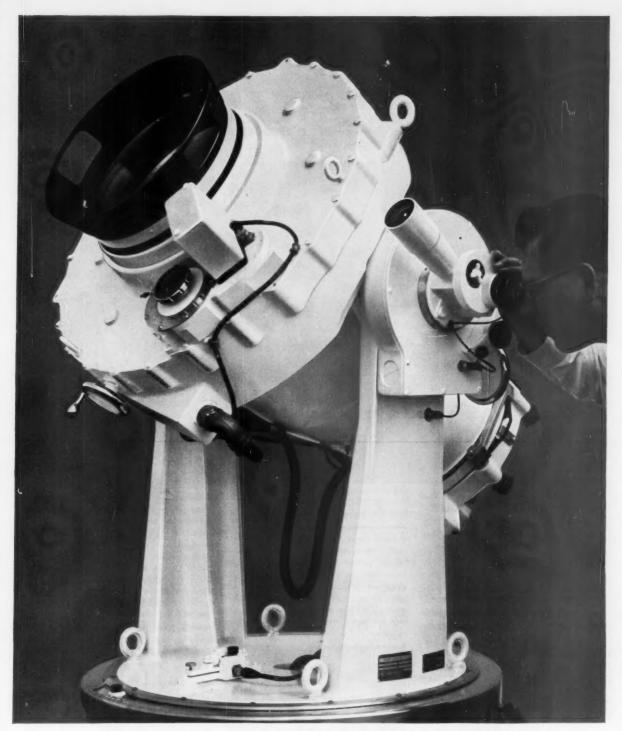
#### **Water Tanks for Arctic**

Slated for installation on the DEW Line this month are two giant water-storage tanks that can hold 65,000 gallons each.

Specially constructed of rubberized fabric by Goodyear, the tanks will eliminate many problems encountered in supplying fresh water to the chain of early warning radar stations stretching from Alaska to Greenland.

To keep the water from freezing in temperatures which can drop to 68 below, one of the tanks will be heated electro-thermally and the other with steam.

The tanks will be filled prior to onset of cold weather that sometimes freezes solid the lakes from which most stations draw their water supply. With these tanks, costly, undependable and inadequate melting are unnecessary.



## This camera watches the birdie

This is a ballistic camera, designed to photograph a missile in flight, and check its trajectory against a precise background of stars to detect the slightest deviation from course. It is the largest accurate ballistic camera ever built. Its 8-element, 600-mm, f/2 lens has an accuracy of 1 part

in 200,000. Though the shutter is 12 inches in diameter, it opens and closes in 2 milliseconds. The entire instrument, including its unique lens and shutter, was designed and manufactured by Nortronics.

NORTRONICS NORTHROP appear as a result of field operational use. To correct these soft spots immediately, or even to anticipate their appearance, I propose that a modest continuing facilities or systems product improvement and modernization clause be incorporated in selected electronic procurements. This clause should be effective for several years after the initial apparatus design, with periodic progress reports stating the improvements accomplished and recommending beneficial changes.

By this procedure I believe that maintenance costs can be greatly reduced, useful equipment life materially extended, operational capabilities improved, and efficiency of team exercises and maneuvers improved by fewer apparatus failures and time out for repairs.

Let us assume that by some means or other we could obtain as little as a 50 per cent improvement in failure factor. This could mean a saving of 50 per cent in maintenance costs, or \$.45 billion; a 50 per cent saving in support equipment costs, or \$.625 billion; a 50 per cent saving in spare parts costs, or \$.625 billion. Total: \$1.7 billion.

The Army can fulfill its responsibilities of maintaining its strength, mobility and flexibility and keep abreast of changing events throughout the world. But these tasks will be made easier if we can establish a better ratio between initial and maintenance costs. When equipment is purchased, the ultimate price constitutes the sum of the instantaneous cost and the maintenance expenditures over its useful life.

One method of helping lower this price is thoughtful contractor selection. In this regard, integrating the bid price with such factors as past, present and potential performance should prove helpful.

Another method is by adding to the useful life of the equipment through continuing product improvement and modernization based on changing conditions, field use, and new techniques and concepts.

Both methods deserve the immediate attention of our procurement chiefs.

#### **Army Tests Lightweight Brain**

Philco has delivered to Fort Monmouth for test a light-weight, mobile computer designed for use in forward combat areas.

Called "Basicpac," the mobile data processer can be transported on a  $2\frac{1}{2}$ -ton truck. Philco claims



Artist's drawing of "Basicpac" shows setup mounted on 21/2-ton truck.

rugged construction and reliable components to minimize the effects of temperature, humidity, noise, vibration, shock and dust.

The computer, up for evaluation by Signal R&D Labs, is designed to handle a variety of combat computations as part of such field operations as logistics, administration, intelligence, command control and fire support.

A Signal Corps soldier sends a teletype message from a subscriber station of the AN/TSC-20, part of the Army's new system of long-range, air transportable communications equipment designed and manufactured by Adler Electronics. Tied into the Army's globecircling STARCOM network, these centrals will help the Army meet limited war situations anywhere in the world.



## (hot sparks)

FIBER optics showing possibilities for night recon photography under dim moonlight conditions. Chicago Aerial Industries working on adaptation for both battlefield and space recon requirements. . . . LEVACAR is latest Ford Stimulator. Proved feasible and currently under development by Ford, it is unique among the several types of air supported ground effects machines. Levacar slides and is supported on a tissue-thin film of air above a formed rail. Speeds up to 500 miles per hour attainable as Levacar hauls heavy loads between cities or to heart of vital military installations. . . . ULTRA-MINIATURE experimental transistor 80 small that 20,000 can fit on a postage stamp, revealed by RCA. Transistor is made by depositing thin films by evaporation on an insulating base, and is capable of shrinking basic circuitry of a computer to the size of a book page. Sizes of basic circuitry of current computers range from large hat box to a walk-in clothes closet. . . . ELECTRONIC device which projects a continuous beam of invisible infrared "light" upon which messages could ride in outer space demonstrated by Raytheon. Company spokesman says beams might also be used to forewarn the approach of on-coming ICBMs or other intruders. . . . ONE-YEAR study contract to RCA by the Army to develop maintenance and logistics program for micromodule equipment. Purpose is to develop support policies for micromodule equipment in the field; to prepare a plan for field validation of procedures recommended; and to prepare a plan for implementation of circuit standardization for the equipment. . . . ORD-NANCE Tank Automotive Command announces that this year for first time "compact" trucks will be bought for military use; safety belt anchors will be required for all seats in military sedans, station wagons and light trucks. Certain buses will be set up to convert quickly to ambulances carrying 18 litter patients, a move which may have added significance in light of Civil Defense responsibilities being shifted to the Pentagon . . . An experimental PAT (for Plenum Air Track) vehicle that can move over water, snow, mud or tundra will be built by Chance Vought under Army

Ordnance contract, It will have a

continuous track of rubber-impreg-

nated cells filled with low pressure



## RYAN FIREBEES

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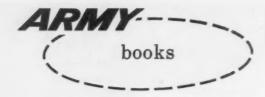


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#### USES OF SPECIAL UNITS

THE WATERY MAZE: The Story of Combined Operations. Brig. Bernard Fergusson. Holl, Rinehart & Winston. 445 Pages; Illustrated; Maps; Index; \$7.50.

#### Reviewed by

COL. ROBERT D. BURHANS, who was G2 of First Special Service Force and closely observed COHQ activities in 1942-43.

Joint schools, staffs, and commands embodying all services today are a cardinal rule in the West. The doctrine of all arms working in harmony toward a single objective makes so much sense one wonders why it was not always so. Brigadier Fergusson relates Britain's World War II experience in forging a headquarteres that sought, worked, schemed, fought, and finally achieved this end.

Combined Operations Headquarters came about during the dark days following Dunkerque. Prime Minister Churchill told Admiral of the Fleet Sir Roger Keyes to raise a headquarters and constitute himself a beacon light of offensive spirit, to "prepare enterprises with specially trained troops . . . who can develop a reign of terror down the channel coasts." This strike-the-German-now directive bore with it a charter to combine all services tightly in a headquarters that would one day look, in its planning, in its scientific studies, and in its general organization, to re-entry into Hitler's Europe. The Special Brigades were already operational with six companies of Army-drawn commandos.

The broadness of the directive, which gave Chief COHQ free access to the Prime Minister, proved his undoing, as did the very fighting character of the man himself. Keyes, who had bottled Zeebrugge and strove to pull the Dardanelles together in World War I, was an impolitic tartar of the first water. In October 1941, having alienated the Joint Chiefs and most of the

operating wartime ministries, he gave way to Captain Louis Mountbatten.

The three hats of high service rank sat easier on Mountbatten, but success was not to be an immediate capstone for him either. The pauperized combat force level in the Middle East led to wrong use of the commandos. Rear-guard cover in Greece and Crete was not their forte: they lost heavily. They were tried in Syria with little success. A small raid in Libva failed to nail Rommel. Several raids from the home islands on Norway did bear fruit, however. Then, in the summer of 1942, the first broad-scale Channel raid on Dieppe brought some valued combined ops lessons that carried through the war. The blood-letting at Dieppe seemed to put COHQ on its feet. Torch gave it momentum, Husky gave it confidence, Overlord crowned it with glory.

An occasional nettle floats in on the tide. The COHQ scientific adviser, Geoffrey Pyke, is credited with designing the Weasel. The facts of the matter are that Pyke came to the U.S. with a plan for the "Plough" or over-snow vehicle. His idea was a counter-rotating Archimedean-screw sled that failed to meet half the requirements. If credit for the Weasel is to be given, then look to Palmer Putnam of OSRD, Ray Cole and his Studebaker engineers, and the track-andbogie people of Ordnance. This is not, however, to derogate the undoubted genius of Pyke, whose Project Habakkuk is touched on here. Though never tried, these trans-Atlantic floating warehouses might have worked.

Fergusson sides with the general British line at Anzio. Montgomery and others have abused this operation with unreasoning ardor. True, the VI Corps operation below Rome in January 1944 did not capture the Holy City, but it did set up a 49kilometer enclave behind the Germans whose reaction was to bring an additional field army to Italy. Had the attack gone inland to the Albano-Lepini heights, as the author contends was the right course, nearly half the fighting strength of Fifth Army would have been cut up in detail. They could and did hold Anzio. To say it was another Tobruk is to compare a gaining asset with a wasting asset.

The book ends with the operations in Burma in 1945 and the Port Said attack in 1956, the latter demonstrating that Combined Operations had not rusted over. It seems a little more could have been wrung out of World War II, namely, certain Yugoslav operations and the work of Brigadier Gubbins's special branch. Small lack indeed, for no amount of quibbling will undermine this well-told tale of joint soldiery. There is nothing watery in the whole amazing story.

#### CHALLENGING PROBLEM

STRATEGY AND ARMS CONTROL. Thomas C. Schelling & Morton H. Halperin, Twentieth Century Fund. 143 Pages; \$2.50.

ARMS REDUCTION: Programs & Issues. David H. Frisch, ed. Twentieth Century Fund. 160 Pages; \$1.25.

#### Reviewed by

COL. JOHN E. DWAN, II, who is on the faculty of the Army War College.

In the growing literature on disarmament and arms control we can detect two broad points of view. One focuses on the goal of a disarmed world reached by means of complex agreements among the Great Powers. The other seeks the more modest objective of achieving stability between the U.S. and the USSR in strategic nuclear weapons and delivery systems. These two books in general take the latter approach.

In the pre-nuclear era people tended to consider disarmament as an alternative to military strategy rather than as one of its facets. After all, if arms were to be reduced or eliminated there would be little or nothing with which to implement a strategy. Schelling and Halperin argue that arms control in the nuclear age, rather than being the antithesis of military strategy, in fact enlarges its scope. "Arms control," they suggest, may or may



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not mean "disarmament" or even an across-the-board reduction in armaments of all types. Only one who argues that disarmament would be a good thing in itself sets his sights on a completely disarmed world. If, on the other hand, we consider that nations will continue to have opposing objectives, then conflict situations and the arms that are a reflection of conflict will continue to be facts of international life. We then might more realistically seek ways to avoid the more damaging kinds of war, and to moderate the violence of wars that nevertheless occur.

Strategy and Arms Control generally follows this line of argument. The authors do not necessarily envision formal international agreements as the media through which might be achieved some measure of stability in opposing strategic nuclear forces. They point out that the military relations between potential enemies involve "strong elements of mutual interest in the avoidance of war which neither side wants, in minimizing the costs and risks of the arms competition, and in curtailing the scope and violence of war in the event it occurs. . . . The essential feature of arms control is the recognition of the common interest, of the possibility of reciprocation and cooperation even between potential enemies with respect to their military establishments." In a real sense the character of the military forces on one side is a reaction to the character of the forces on the other. This is to say, the size, composition, and capabilities of one side-and the intentions that such capabilities imply-will greatly influence the kind of forces the other side de-

There is much to be said for the authors' view that our strategic posture, composed as it is predominantly of soft airbases and missile sites, faces the opponent with the threat of a first-strike, counterforce attack—our declared policy to the contrary notwithstanding. The vulnerability of our force renders it unable to survive an attack and to retaliate effectively, and imposes on it the necessity for instant reaction to an alarm. As Schelling and Halperin express it: "The greater the ur-

gency with which the decision [to launch] must be made in the event of alarm, the greater the likelihood of converting a false alarm into war itself. . . . Hardly anything would be as tragically ironic as a war that both sides started, each in the belief that the other was about to, each compelled by its expectation to confirm the other's belief that attack was imminent."

They suggest that "If both Soviet and American forces should succeed, through cooperative measures or unilaterally in developing reasonably invulnerable retaliatory systems, so that neither could disarm the other in a sudden attack and neither needed to be obsessed with the imminence of attack, a large reduction in numbers might come naturally. Certainly, nothing like the nuclear energy delivery capability of our present bomber force would be needed if the entire force were reasonably secure against attack and if Soviet forces were similarly secure against our attack "

The obvious desirability of avoiding the volatile relationship now building up between the U.S. and the USSR in strategic nuclear striking forces requires that both sides, in their own self-interest, take measures to stabilize the delicate balance of terror, either unilaterally or in concert, the authors contend. These measures would be a form of "self-regulation," and as such would reflect what is meant by the idea that arms control is really an adjunct of strategy.

Arms Reduction: Programs and Issues consists of 14 papers by specialists who, like Schelling and Halperin, were members of a summer seminar on arms control held in 1960 by the American Academy of Arts and Science. It reflects the general theme of the desirability of invulnerable retaliatory forces on both sides. The concept is carried further into the outline of a proposed draft agreement by which stability might be achieved in phased stages. Supporting papers discuss various aspects of the program such as the problems of inspection. More emphasis in this volume is placed on formal agreements as a means of achieving a regulation of armaments.

One could sum up the principal

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thesis of both books by saying that they advocate as our policy the creation of a condition of stable mutual deterrence between the U. S. and the USSR, and suggest ways of achieving it. Taken together they offer stimulating reading for anyone who would like fresh perspectives on a challenging problem.

#### GUIDE FOR THE FUTURE

UNITED STATES ARMY IN WORLD WAR II.

The Ordnance Department: Procurement and Supply. Harry C. Thomson & Lida Mayo. Office of Chief of Military History. 504 Pages; Illustrated; Index; \$4.00, Reviewed by

BRIG. GEN. DONALD ARMSTRONG, who was Chief, Chicago Ordnance District, 1939-42, and later Commandant, Industrial College of the Armed Forces.

The U.S. Army has an enormous stake in the efficient operation of the Ordnance Corps. Consequently, this historical survey of two Ordnance functions during World War II—procurement of Ordnance material and its supply and maintenance in the field—has special interest for the men whose lives and fighting ability depend on the effec-

tiveness of these activities. To understand problems of lead time, of calculating requirements, of quality control, of spare parts, for example, this book provides an accurate report on the past with a look at the possibility of a better future.

Undeniably Ordnance, like everybody else, made mistakes. The authors uncover them and examine remedial action at the time and for the future. Here was an opportunity for muckraking or concealment, for exhibiting wisdom born of hindsight. But fortunately the authors have been fair and objective in their research, in the selection of material for the book, and in their interpretation of the facts. They have written a history that is an outstanding example of the potential value of the study of the past when it is honestly written and thoughtfully pondered by the reader. If we repeat the mistakes of World War II, it will not be because the authors of this book failed to provide a guide for the years ahead.

From procurement planning before 1940 to contract termination was a long, hard road. There were some roadblocks of our own making, some by Ordnance, some by higher authority and the using arms. There were many obstacles in the modern counterpart of beating ploughshares into swords. More than two-thirds of the book surveys the production of armaments. The remainder is devoted to field service at home and in the combat theaters. Procurement is analyzed along commodity lines of artillery, small arms, tanks, and so on, while field service is studied on a functional basis of depots, supply in the field, and maintenance.

Dr. Thomson and Mrs. Mayo are professional historians. They have accomplished the difficult task of writing clearly on highly technical subjects with a minimum of obscure terminology baffling to the layman. Many Ordnance experts would prefer greater detail, but they, like all readers, will appreciate the excellent organization of the material, the statistical tables, charts, illustrations, and the index which make this a valuable tool for improving future operations.

#### INFLUENCE OF A MILITARIST

TOJO AND THE COMING OF THE WAR. Robert J. C. Butow. Princeton University Press. 584 Pages; Illustrated; Index. \$10.00.

Reviewed by

Lt. Col. Louis Morton, author of two volumes in the Army's history of strategy and command in World War II.

To most Americans, General Hideki Tojo, wartime premier of Japan, stood for all that was evil in Japan. More than any other character of wartime Japan, including even the Emperor, General Tojo was the embodiment of Japanese military fanaticism and Oriental mysticism, the symbol of the hated enemy.

Is this wartime image of Tojo an accurate portrayal? Was he the real ruler of Japan, the man who manipulated a puppet emperor? What were his policies, and why did he deliberately guide the nation into war with Britain and the United States? These are the questions whose answers are sought by Professor Butow, who holds a joint appointment at the University of Washington's History Department and in the Far Eastern and Russian Institute. That he does so, and with clarity and conviction, is a tribute to his thorough research, his broad knowledge of Japanese history and psychology, his facility with the language, and to his meticulous and painstaking scholarship.

Tojo and the Coming of the War is both history and biography. It is at once the story of one of the major figures of World War II and of the complex series of events, seen largely from the Japanese side, that led to the attack on Pearl Harbor. These two threads, the personal and the political, are skillfully woven to form an absorbing pattern of Japan in the fateful years preceding the war-the years during which Tojo rose to power-of Tojo's fall from power after the U.S. invasion of Saipan, his attempted suicide, and his trial as a war criminal. The first part of the book sets the stage: it deals with Tojo's early years and the development of Japanese expansionist policy down to the "China Incident." In part two, Tojo emerges as a major leader, representative of the military clique that took Japan into war. The last

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section is in the nature of an epilogue, completing the story of the man and his times, with most attention to the former. In a sense this is the weakest portion. Dealing largely with Tojo's trial, it includes only the briefest account of the General's conduct of the war and is unsatisfactory as either biography or history though it vividly describes Tojo's last days.

The meat of Professor Butow's work is in the second part, that portion dealing with the coming of the war. It constitutes the fullest account yet written of the steps by which the Japanese nation traveled down the path that led inevitably to war. It was a road the militarists chose, and they were able to take the nation with them by virtue of their political influence, an influence personified by Tojo. "The unifying theme throughout the book," says the author, "is the role of the Japanese Army in affairs of state as seen through the career of General Tojo."

But even Tojo was not supreme; certainly he was no dictator, for behind him were the little-known officers of the Imperial Army's General Staff who were the real rulers. Perhaps the great lesson of the war not only for the Japanese but for others as well lies in the proper role of the military in our modern society. The "principal cancer of Japan," wrote Admiral Nomura, Ambassador to the United States in the fateful month leading up to Pearl Harbor, was independence of the military from civilian control-"a blunder," he added, that must "never be repeated in the future." Tojo himself would have agreed with this verdict, for in his final testament, done just before his execution, he wrote that "the concept of the independence of the Supreme Command" had a fatal effect on the strategy and conduct of the war. Too much power can be as stultifying in its effects on the military as too little. Only when the proper balance is achieved, when there is a correct relationship between the civilian and military authorities can the military function effectively to serve the interests of the nation. For this lesson alone, Tojo and the Coming of the War is required reading for all who aspire to high command.



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